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ABSTRACT

As states work to provide public funds for early care and education programs, they need data on the current system to better provide a system that supports parents' need to work, promotes healthy child development, and ensures the educational quality of all early education and care programs. This report provides Massachusetts' policy makers with a picture of how public funds to support early education and care are currently distributed. The report includes data on state and federal programs, and describes initiatives to standardize data collection across programs. Also summarized are findings from recent brain development research; the effects of high-quality programs are discussed. The report concludes with recommendations for expanding services and creating a better infrastructure for early education and care. Six appendices include definitions, a summary of state and federal agencies funding early care and education services, descriptions of the Boston EQUIP and the Community Profiles Projects, and lists of participating communities and estimated need data per town. (Contains 34 references.) (KB)

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Setting a Course for Early Education and Care in Massachusetts:

Using Data to Guide Policy Development

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Future Trends – Volume V: 1999

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Setting a Course for **Early Education and Care** in **Massachusetts**

Using Data to Guide Policy Development

Future Trends - Volume V: 1999

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April 1999

Dear Colleagues:

I am pleased to present Setting a Course for Early Care and Education in Massachusetts: Using Data to Guide Policy Development. This report was written by members of the Department with guidance from the Massachusetts Early Childhood Advisory Council and with the substantial support of staff from other agencies that administer programs for young children in the Commonwealth. This is the fifth report on future trends in early care and education undertaken by the Council since its inception in 1985.

Today, families must struggle to find quality early childhood and school-age programs. They worry about being able to afford the quality their children need to grow and develop, emotionally and intellectually. Policy makers need data on the current system in order to fit the pieces of the early education and care puzzle together in a way that supports parents' need to work, promotes the healthy growth and development of children, and ensures the educational quality of all early education and care programs.

This report provides policy makers with a picture of how public funds to support early education and care are currently distributed. Data on both state and federal programs are included, along with a description of initiatives to standardize data collection across programs. The report concludes with recommendations for expanding services and creating a better infrastructure for early education and care.

The next step is for the Department to work with the Office of Child Care Services and other state and local agencies to collect data on the quality of programs because program quality is a solid predictor of positive outcomes and school success. As a longer term project, a system needs to be developed to assess the long term effectiveness of Massachusetts' early childhood programs on children, and to follow children's progress from early childhood programs through the school years.

In addition to improving data collection at the state level, the Department's Community Profiles project, which is described in this report, involves communities in assessing their own needs and strengths. The resulting data will provide a comprehensive view for program planning at the local level as well as policy development at the state level. Gathering data across local, state and federal programs will provide the Commonwealth with information that can be used to set benchmarks for program development and monitor progress.

If you want additional copies of the report, want to comment or have any questions about the report, please contact Early Learning Services at 781-388-3300, extension 357.

Sincerely,

David P. Driscoll
Commissioner of Education

Acknowledgments

We would like to thank several agencies and individuals for their contributions to this work. The Early Childhood Advisory Council (ECAC) to the Department of Education has been particularly helpful in guiding the development of this report. The members of the ECAC are listed on the next page. We would also like to recognize the work of the Data Collection Advisory Committee in supporting the development of the Community Profiles Pilot Project as well as their efforts to revise the report. The Administration for Children and Families, the Office of Child Care Services, and the Department of Public Health were extremely expedient and accommodating in handling our multitude of data requests. Their comments on the data presentation were also invaluable and we look forward to future collaborative efforts.

We would like also to acknowledge the work of Associated Day Care Services (ADCS). The Boston EQUIP project, managed by ADCS, is the template for Community Profiles. The hard work and creative leadership of the Boston EQUIP Advisory should not go unrecognized. Particularly the work of Doug Baird, Marty Cowden, Pat Xavier, Roy Walker, Kathy Modigliani, Bonnie Hannibal, Steffi Wright, Ellen Reeber, Laura Gang, Elaine Fersh, Charlotte Kahn, Sherrie Lookner, Lordes Sariol, Ann Schelsinger, and Carl Sussman.

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Executive Summary

Today, an unprecedented number of innovative efforts in early education and care constitute a nascent reform movement. The rough planks for a change agenda are already in place – isolated and incomplete, to be sure, but promising nevertheless.
Kagan & Cohen 1997

In Massachusetts there are positive signs that a family-friendly system of early education and care might be realized. This report outlines the current situation in Massachusetts, what is currently being done about it and some suggestions for improving the future. To effect change, the first step is information. This report seeks to establish what information exists and how it can be used to develop coherent policies that will create the kind of change envisioned by Kagan and Cohen.

Legislation states that the Early Childhood Advisory Council to the Massachusetts Board of Education will report on "…the provision of services for children from birth to three, and … examine all early care and education services provided by the state to evaluate which populations have the greatest need for services, to what degree those populations are served by the program created by this section [Community Partnerships for Children] as well as by other existing services and …develop strategies for serving all unserved segments of the population." "Setting a Course for Early Education and Care in Massachusetts: Using Data to Guide Policy Development," satisfies the requirement of M.G.L. Chapter 15, Section 54 for a biannual report on future trends in early education and care. To this end, this report provides:

- Definitions of the many terms used in the field of early education and care (including "early education and care.")
- A summary of relevant research in the areas of brain development, the value of early childhood programs as interventions or preventative measures, and the effects of program quality on child outcomes.
- An overview of the roles of principal agencies involved in providing early education and care.

The report then moves to information about the system in Massachusetts, including:

- Some of the good things that are happening in the state, such as increased early education and care services, partial consolidation of disparate programs, the development of local systems through Community Partnerships for Children, how in-kind contributions augment public funding, and the increase in numbers of early education and care programs that are accredited by the National Association for the Education of Young Children.
- Facts about the current system – how many children are served in different programs, how much various state and federal agencies contribute to supporting early education and care, how investment has changed over time, how many children of different age groups are being served with various public funds, how the supply of early education and care programs varies across the state, and a discussion of affordability and under-served populations.
- Current efforts to gather, consolidate and use data more effectively for program planning.

In the final section, recommendations will be suggested based on the data and findings of the report. This information will allow the completion of the final charge of the legislation – to "develop strategies for serving all unserved segments of the population."

The recommendations are:

1. Expand services and equalize access for families with children who need education and care programs by:

    - Expanding infant/toddler care
    - Reviewing the need for additional preschool services
    - Increasing the number and quality of full-day kindergarten classrooms
    - Expanding school age programs

2. Create a comprehensive structure for early education and care by:

    - Improving data collection to inform policy development
    - Creating a task force to construct a long-term funding plan
    - Establishing consistent standards and goals for quality
    - Developing a set of child results and benchmarks
    - Developing a public education initiative.

Massachusetts has made progress in developing the beginnings of a comprehensive system of early education and care. There remains much to be done. Moving forward will entail many changes. Our criteria for evaluating each step should be how well that step improves the lives of children and families in the Commonwealth.

Introduction

Early education and care programs are essential not only for children but also for parents and business. Recent advances in neuroscience demonstrate that the first several years of life are critical for brain development and that high quality care and education programs play a vital role in this period for children. At the same time, parents depend on early education and care in order to work and businesses rely on employees who have stable child care arrangements that allow them to focus on their work.

This report will review advances in the field of early child care and education, lay out current understanding of Massachusetts' early education and care system, discuss a community approach to collecting data for local and state planning, and present recommendations for serving underserved populations. This process and the data collected will help create a more thoughtful, accountable, and responsive system. This report will lay the ground work and rationale for the community data collection project, Community Profiles. Future reports will discuss the results of our efforts.

Demand for early education and care has increased dramatically in the United States. Over seven million children (52%) are in formal care settings (Queralt & Witte, 1998). In Massachusetts an estimated 167,076 children are in a family child care, a child care center, a Head Start program, a school age program, a preschool program in the public schools[1], or in some combination thereof. The system is funded largely by families, but also by a mix of public programs. Policy makers need basic information about the early education and care system and the families who use it in order to turn the current mixture of public and private early education and care programs into a high quality, family friendly system that supports children's development.

The Early Childhood Advisory Council (ECAC) to the Massachusetts Board of Education is charged by legislation (MGL Chapter 15, Section 54) to report biannually on the early education and care system in Massachusetts. Specifically, the legislation states that the ECAC will "conduct a comprehensive study of future trends in early education and care, including the provision of services for children from birth to age three, and…examine all early education and care services provided by the state to evaluate which populations have the greatest need for services, to what degree those populations are served by the program created by this section as well as by other existing services and…develop strategies for serving all unserved segments of the population."

There are terms that have particular meanings within the early education and care community. Definitions of some of the terminology may be found in Appendix A to ensure that such terms as "early education and care," child care, early intervention, Head Start, preschool and other familiar words are understood in the same way by all.

Research:

Supporting the Development of a System of Early Education and Care

This section reviews three topics: advances in brain research, studies of early intervention, and studies on the effects of quality in care and education. Each of these topics guides the effort to create a comprehensive, high quality system of early education and care.

Brain Research

> *There is growing consensus, among decision makers in many fields, that efforts to recast policy and reconsider the best use of public resources must begin at the beginning - with clearheaded thinking about young children's brains (Shore, 1997).*

Rethinking the Brain: New Insights into Early Development, by Rima Shore (1997), summarizes current knowledge about brain development and is the source of much of the following information. Human development hinges on the interplay between nature and nurture. Although genes play a role in the development of the brain, they are not the only factor. Experience in the world and environmental factors have a vital role in brain development.

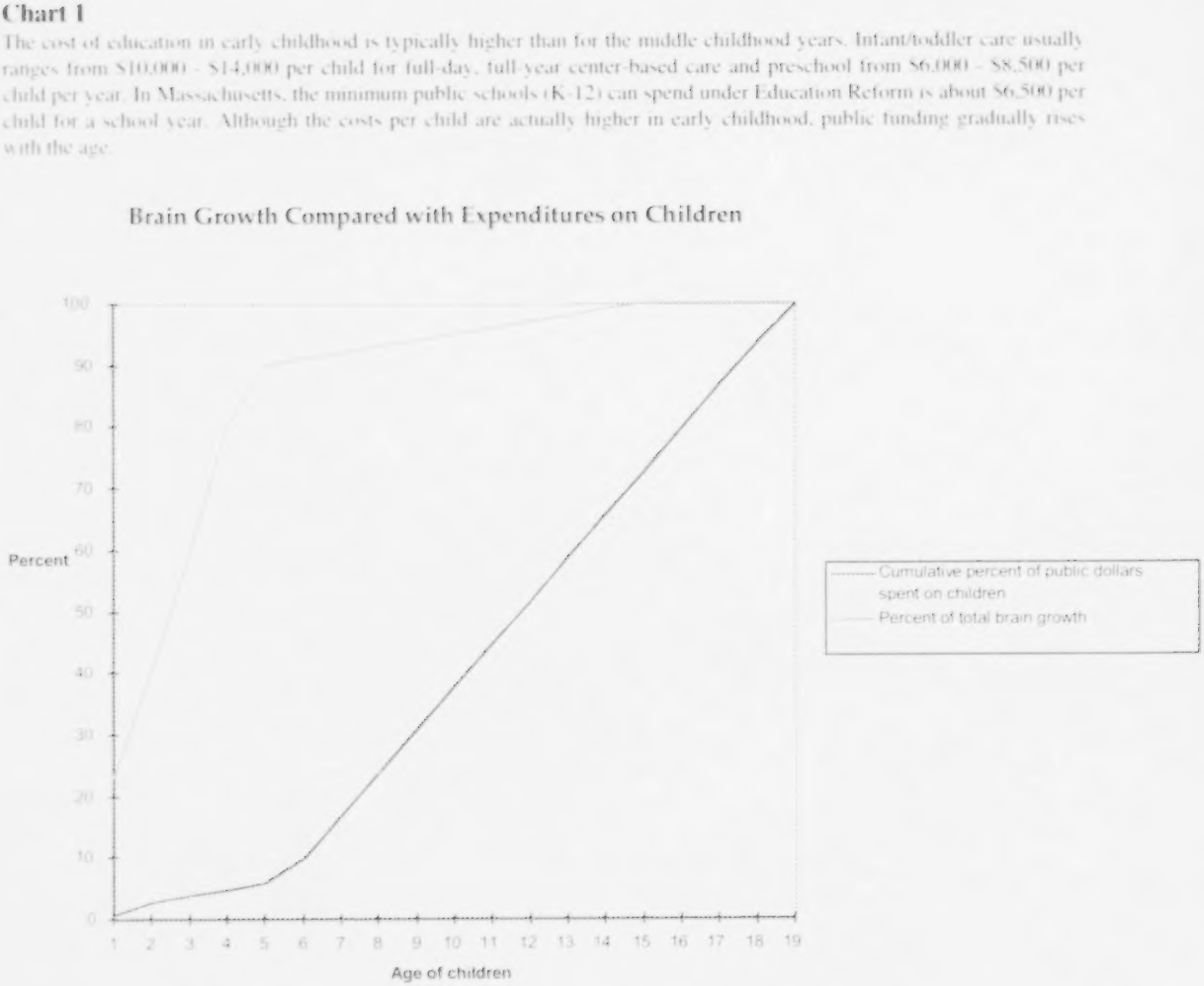
The brain is a complex network of neurons and synapses that start forming before birth. Synapses form pathways between and among neurons that allow the brain to communicate. The number and arrangement of synapses are a major factor in an individual's learning and development. Creation of synapses continues during the first ten years of life but the majority of synapses are developed during the *first five years of life*. In fact, young children develop twice as many synapses than they will need as adults. How, then, do environmental influences such as nutrition and relationships with others actually shape the brain? It is through these interactions that synapses are activated. Synapses that are activated are kept. Synapses that are not used atrophy. A young child's experiences, whether positive or negative, have a permanent and deep impact on the configuration and complexity of the brain and therefore, early childhood experiences have a long-term impact on cognitive development and learning.

Though the results of research extend far beyond this summary, several policy and practice implications are suggested. There is a window of opportunity when children are very young (0-5 years) when we can provide them with positive experiences and rich interactions with their environment. These experiences and interactions contribute to their brain development. Providing *high quality* environments is the most obvious way to have an impact on children's development, and requires both supporting parents and staffing programs with trained teachers who nurture and understand the way children learn. Parent support includes providing parents with information about how young children develop and learn.

The research documents that supporting children's development can increase their future success and abilities dramatically. Based on the facts, investing in programs for young children makes sense. However, Chart 1 on the next page demonstrates that public dollars spent on children do not parallel brain development. Most of the public dollars invested to support children's growth and development are invested for children from six through college age rather than in the first few years. Given a long term view of development and savings in social spending, the lack of support committed to young children should be of concern. In the last few years, many states have started to focus on many aspects of early development with increased funding for early education and care, family education and support, and home visiting programs.

Chart 1

The cost of education in early childhood is typically higher than for the middle childhood years. Infant/toddler care usually ranges from $10,000 - $14,000 per child for full-day, full-year center-based care and preschool from $6,000 - $8,500 per child per year. In Massachusetts, the minimum public schools (K-12) can spend under Education Reform is about $6,500 per child for a school year. Although the costs per child are actually higher in early childhood, public funding gradually rises with the age.



Source of information for this chart is the RAND study, *Investing in Our Children: What We Know and Don't Know About the Costs and Benefits of Early Childhood Interventions* (Karoly, 1998).

Programs that Support Positive Outcomes for Children

Early childhood programs are introduced between birth and age five and are located in a group educational setting or in the home, or both. The guiding belief behind early childhood programs is that intervention in the first few years of a child's life has beneficial and enduring effects on later social and cognitive development. Providing the child with early educational and emotional support is crucial to normal development (Lazar, 1982; Ramey et al., 1994). In the majority of early intervention programs, parents are regarded as essential partners in facilitating the child's intellectual growth.

Intervention in early childhood has a long research tradition. Since 1930, research in early intervention has provided data for the long-standing debate concerning the modifiability of intelligence (i.e., Hernstein and Murry, 1994) and has been used as ammunition in the "War on Poverty" (Zigler and Kagan, 1996). Barnett (1995), in his comprehensive review of twenty evaluation studies of the impact of early childhood education and several outcome measures, concluded that: "Across all studies, the findings were relatively uniform and constitute overwhelming evidence that ECCE [Early Child Care and Education] can produce sizable improvements in school success (p. 40)."

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Some studies have called into question the positive effects of preschool intervention because increases in I.Q. seem to be transient or to "wash out" by about third grade (Hernstein and Murry, 1994; Schweinhart, Barnes and Weikart, 1993). Although the value of I.Q. itself as a measure is questionable (Gardner, 1993; Gould, 1996), it is frequently used as a research measure and so deserves some discussion.

There is no one explanation for the transience of gains in I.Q. scores. Family changes, school quality and measurement errors are all possibilities. Even short-term increases in I.Q. could have beneficial effects related to some of the long-term benefits that have been found. For instance, the I.Q. gains made through preschool attendance may improve performance in kindergarten. Kindergarten is a key "transition" point in a child's school career (and in life) and how teachers and parents view and treat children in this year often affect them for many years (Entwisle, 1995). A good start in kindergarten can prevent parents and teachers from developing low expectations and protect children from tracking practices (such as ability grouping and retention) that lead to negative outcomes. Preschool attendance also has positive effects on social and emotional growth. Well developed social and emotional development accounts for a considerable amount of success in school (Goleman, D., 1997). These are a few of the reasons that the "wash out" effect seen in the early grades may be less important than it might seem.

Rand (Karloy, et al., 1998) recently conducted a more selective review of early intervention. They reviewed nine studies that were longitudinal and experimental; that is, the studies had random assignment to a treatment and control group. The Rand study concludes that children who receive early intervention demonstrate:

- Gains in emotional and cognitive development for the child, typically in the short run, and improved parent-child relationships.
- Improvements in educational outcomes for the child.
- Increases in economic self-sufficiency, initially for the parent and later for the child, through greater labor force participation, higher income, and lower welfare usage.
- Improvements in health related indicators, such as child abuse, maternal reproductive health, and maternal substance abuse.
- Reductions in criminal activity.

In short, early intervention and early childhood education as a preventive measure benefits children individually and society as a whole.

The Effects of Quality

Research documents that only high quality interventions and environments have a positive effect on children's development (Phillips, 1987 and Helburn, 1995). Two sub-categories of quality are structural elements and process elements. Structural elements are variables that can be regulated by an outside force. Staff-to-child ratios and teachers' educational level are examples of structural variables. Process variables include tangible and intangible experiences in an environment, such as curriculum, teacher personality, and interaction between the caregiver/teacher and the child. While both process and structural variables are important, structural variables can be more readily regulated by policy makers and therefore are easier vehicles for policy changes (Ruopp et al., 1979; Hayes et al., 1990). For instance, any state in the United States can change its requirements for group size or staff to child ratio. It is much more difficult to regulate process variables, such as teaching style.

The validity of structural variables as contributing factors to young children's development is supported by twenty years of research. Several national studies demonstrate that the ratio of the number of staff members to the number of children, teacher preparation, and group size are related to positive outcomes in young children (Ruopp et al., 1979, Phillips, 1987; Helburn, 1995). More specifically, the higher the staff to child ratio and the lower the group size, the more children's language and social emotional development improve.

Two national studies, the National Child Care Staffing Study (Whitebook et al., 1992) and the Cost and Quality Study (Helburn, 1995), document that staff salaries, training, and turnover correlate strongly to language and social gains in young children. The findings are straightforward -- the more teachers are paid, the more training they receive, and the longer they stay employed by the program, the better the outcomes are for children. The findings on language gains are particularly notable. The vast majority of language acquisition occurs in the first years of life before children enter school. Language development is a key component in the cognitive development that supports later school success, so it is vital that educators take a keen interest in programs and strategies that enhance language development.

Focusing on School Success: The goal of early education and care programs for young children is to ensure positive development across all domains, particularly social-emotional and language development, which lays the groundwork for school success. The priority is then to identify how to measure progress in attaining these goals. Measuring outcomes in young children is a difficult task because early skills are not as quantifiable as those of older children. Some reliable and valid measures do exist that are positively related to school success. Vocabulary tests, measures of attachment behavior, maternal education and family income are all associated with later school success. The quality of the early education and care program is another measure that is related to later school success and long term social benefits. The more children participate in early education and care environments that promote positive relationships and provide them choices and rich experiences, the more likely it is that children will succeed in school.

Several reliable and valid measures have been developed to measure quality in early education environments. These measures are broken into three categories: structural variables, child/teacher behavioral observations, and global quality scales. Each of these measures is correlated with one another. In other words, measuring one usually produces similar results on the other(s). For example, if the program has highly trained and educated staff, the teacher and child interactions will most likely be positive and hence the program will get a high rating on a global quality scale. Capitalizing on these research findings, the National Association for Education of Young Children (NAEYC) developed an accreditation process that promotes the training of teachers and measures classroom behavior. A program that receives accreditation status by definition should be of high quality. Currently this assumption is being tested nationally by several research efforts. At the same time, accreditation has its limits, it is inspired teachers and creative curriculum that ensures true excellence.

While these measures are cost effective and correlated with school success, they cannot substitute for longitudinal studies that follow children from birth, and then track progress at fixed points in the school career when more academically oriented measures can be used (i.e., the MCAS). To lay the groundwork for such a system, the state agencies need to build the capacity and resources to conduct such a study. For now, however, measuring the quality of programs is the best strategy to promote school success for young children. In a later section, efforts are described that measure these and other data on the system.

Creating a System of Early Education and Care

Efforts to develop a comprehensive picture of the current system or to suggest directions for future systems development are not new. Several national reports recommend developing a comprehensive system of early education and care (Kagan, 1991;Kagan & Cohen, 1997; Carnegie Corporation, 1996 are three examples). In Massachusetts several recent reports have begun to address system development. The *Child Care Access Study*, (Office for Children, 1993), *Children First* (Special Commission on Early Childhood, 1995), *Joining Forces* (Open Forum on Early Education and Care, 1996), and the Office for Child Care Services funded *Evaluation of State Subsidized Child Care Services* (MAOCCS, 1998). All review statewide service systems. The Springfield needs assessment study (Leibowitz, S., 1997; Preschool Enrichment Team, 1997) and the Boston EQUIP (1998) study are examples of comprehensive needs assessments and analyses that provide excellent information for local planning.

Taken together, these reports identify a need for an expansion of:

- Care for all age groups - infant, toddler, preschool, school age
- Before- and after-school care, more care during non-traditional hours, vacation care and sick care
- Access and support services for children with disabilities
- Transportation services and
- High quality, safe, early education and care facilities

In addition, families need more access to:

- Affordable care (e.g., for families whose incomes are 150% of State Median Income)
- Information about early education and care and about child development and
- High quality care and education programs

What is absent from the reports is information on the quality of services delivered by the early education and care system. Given the implications of brain development and quality research, we need data not only on the supply of care and education but also on the quality of the system. For example, we have no state-wide data on staff salaries, turnover, or educational levels. Each of these variables is related to positive outcomes in young children.

An Overview of the Current System

> *Across our nation today, early education and care is a non-system - a haphazard accumulation of insufficient, ineffective, and uncoordinated mechanisms for funding and governance. Programs have proliferated on a fund- and govern-as-you-go basis. As a result, federal, state, and local responsibilities are not clearly delineated.*
>
> Kagan & Cohen, 1997

Although a wealth of effort and thought has been applied to the problem, the system remains a three-dimensional jigsaw puzzle with key pieces missing. Various programs and funding streams have been created to address particular concerns at different times, the result being separate bureaucracies and categorical programs. There are eleven federal agencies that fund child care programs (Kagan & Cohen, 1997). This situation is echoed at the state level. While more care has been funded in the last few years, the system to support and coordinate services at the local and state levels is just emerging. The agencies that administer early education and care programs in Massachusetts are described below. These descriptions do not include the many other functions these agencies perform.

- **Administration for Children and Families (ACF)** is the federal agency that administers Head Start, Early Head Start and federal child care funds. A regional office located in Boston is responsible for administering funds, program monitoring and data collection. As part of the U.S. Department of Health and Human Services, ACF is responsible for a variety of other programs for children and families in poverty.

- **Children's Trust Fund (CTF)** is a public-private partnership working to prevent child abuse and neglect by strengthening families. CTF administers seven family centers and administers Healthy Families, a home visiting program for young mothers, in addition to many other advocacy and family support efforts.

- **Massachusetts Department of Education (DOE)** is the state agency that administers any funds for early childhood programs that flow through from the federal U.S. Department of Education or that are allocated to Education Reform in the state budget. Federal funds administered by the Department include Title I, which is used for preschool in some districts, and the Preschool Grant, which provides funds for children 3, 4, and 5 years old with disabilities. State funded programs are the Community Partnerships for Children (CPC) program for preschool-aged children, the Massachusetts Family Network family support program for families with infants and toddlers, and the supplemental Head Start grants.

- **Department of Public Health (DPH)** administers the Early Intervention Program with federal funds for infants and toddlers with disabilities or at risk of having disabilities. DPH also administers a variety of programs that are relevant to the early education and care system, such as prenatal care, home visits, maintains birth records and data, and other such programs.

- **Executive Office of Health and Human Services (EOHHS)** is the secretariat that serves as an umbrella for the Office for Child Care Services, Department of Social Services, Department of Transitional Assistance and Department of Public Health. The Head Start Collaboration Project and the Infant/Toddler Summit are administered by this agency.

- **Office of Child Care Services (OCCS)** administers state and federal funds, including child care contracts to serve low income working families, child care vouchers for families receiving transitional assistance and families who have just started working, and the federal Child Care Development Block Grant. The Office also licenses all child care centers and family child care homes.

- **Child Care Resource and Referral Agencies (CCR&R)** provide resource and referral services for parents and businesses that provide child care as an employee benefit. There is a cost for the service on a sliding fee scale. The CCR&R also provide information, training and technical assistance to licensed child care centers and to Community Partnerships for Children programs. In addition, these agencies process child care vouchers for families on Transitional Assistance for Needy Families (TANF).

Given the number of agencies that administer early education and care funds (see Appendix B for a summary of program funding and numbers served), it is important to understand how each fits into the puzzle. The agencies are working collaboratively to develop a comprehensive and coordinated system (described in later section). However, putting together programs with different priorities, histories and monitoring requirements is a challenge.

One of the challenges faced is the process by which each agency counts the children they serve. The Department of Education, the Department of Public Health and the Administration for Children and Families report number of children funded by programs whereas the Office of Child Care Services reports the number of slots funded by the agency. For example, one slot may provide services to one child for half of the week and offer services to a second child the second half of the week. So, although two children receive services, one slot is reported. This difference presents a challenge to understanding the actual number of children served or slots funded because the units of measurement differ from agency to agency. In addition, one child might be served by two funding sources (i.e., ½ day Head Start and ½ day by Community Partnership for Children).

Furthermore, each agency has its own method of collecting data. In an effort to determine which data are collected by each agency, it was found that the four agencies providing child care and educational services collect 37 pieces of information on children and families. Of these only one measure, family income, is collected by all four agencies. However, the information collected by each agency is a part of the picture, but the information must be pieced together for a comprehensive view of the services provided. The next section weaves together the existing data in order to provide an up-to-date understanding of the early education and care system.

Recent Improvements in Massachusetts

In the last five years there have been substantial increases in state funding for early education and care, both through OCCS child care vouchers and contracts and through the Department of Education's Community Partnerships for Children program. Also there have been significant steps to develop an early education and care system:

- Child care funds and programs that were previously housed in the Departments of Social Services and Transitional Assistance and the Office for Children were merged into a new agency, the Office for Child Care Services.

- The 167 Community Partnerships for Children (CPC) programs, which cover 330 of the Commonwealth's 351 cities and towns, have worked on developing local early education and care systems. CPC Councils work collaboratively to use grant funds to subsidize children in local programs, provide comprehensive services, and improve quality through professional development and accreditation of programs.

- Some CPC programs join with neighboring programs to provide courses for teachers and develop cross-community agreements to allow children in one town to attend programs in another town.

- A study by Tufts University (1996) found that for every state dollar invested in CPC programs, local in-kind contributions amounted to 45 cents.

Quality: In 1997 the Department of Education conducted a study on accreditation. At the time of the study, data revealed that NAEYC accredited 463, or 20 percent, of the programs in Massachusetts. These programs represent a combination of private centers, Head Start programs and public school programs. The survey revealed that 963 center-based programs were participating in the Community Partnerships for Children program in early FY '98. Of these 963 programs, 323 were accredited and an estimated 500 were in the self-study portion of the process. Most are expected to be accredited within the next year. Accredited programs participating in CPC represented 70 percent of all accredited centers in Massachusetts.

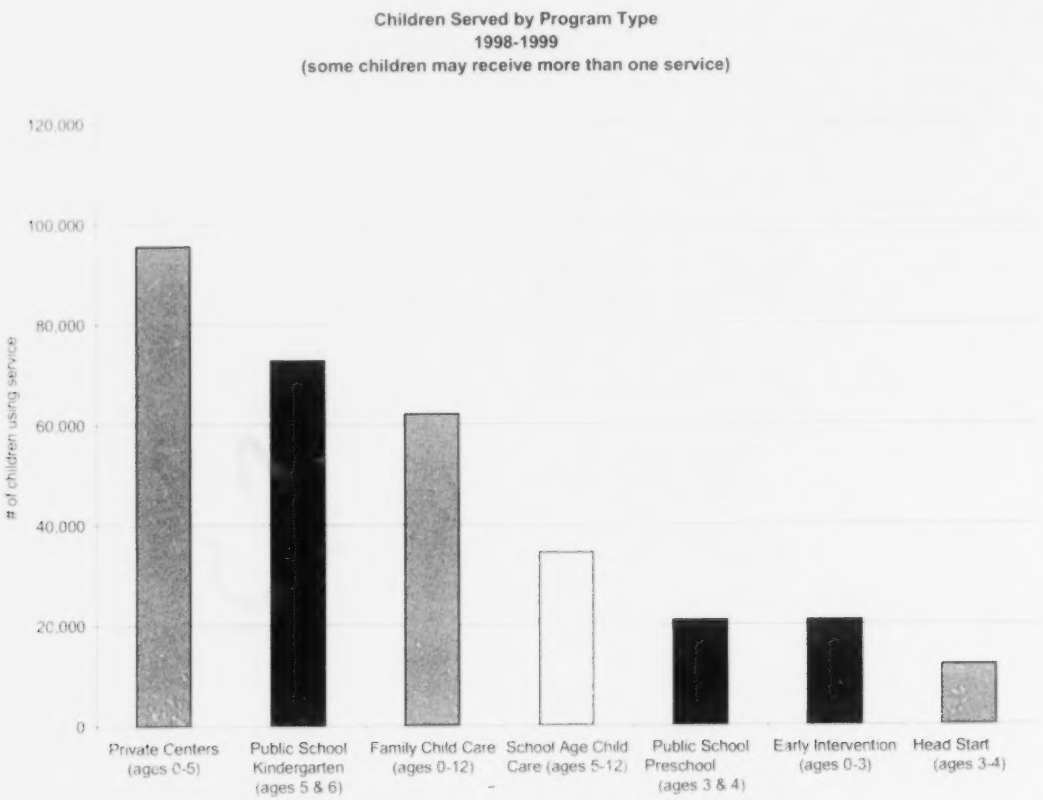
The National Association for the Education of Young Children (NAEYC) accreditation system is based on standards of program quality. Programs conduct a self evaluation. This procedure engages administrators, staff and parents in a reflective process and challenges providers to examine their policies and provide training to staff on teacher-child interaction, curriculum and parent involvement. A trained observer for NAEYC then visits, reviews paperwork and uses a validated classroom observation instrument. The validator then reports the results to a panel that accredits, postpones or refuses accreditation. Massachusetts is one of several states requiring programs participating in their state-funded preschool program to become accredited. This is a growing trend because, historically, the quality in much early education and care has been low. Although accreditation focuses primarily on process variables and does not guarantee excellence, it has been correlated with positive child outcomes and provides states with assurance that the conditions of quality have been provided.

Facts about the Early Education and Care System

This section reviews what is currently known about the Massachusetts early education and care system, beginning with children at birth and including all early education and care services except for public K-12 education. The exception is kindergarten, which is included because it is intertwined with the private child care system due to the short hours provided by most kindergarten programs. School age child care -- before and after school programs for children ages 5 through 12 -- is included.

Where Are Children Served: Private child care centers served the largest number of children, followed by public school kindergarten programs (Chart 2). Public school kindergarten programs serve 5 and 6 year old children and vary in their hours of operation. In FY 1999, 84 school districts offer full-day kindergarten (25 hours or more per week). The remainder of the school districts offer kindergarten students a part-day program. Typically, public school preschool programs for 3- and 4-year old children operate on a half-day schedule with two sessions per day, two to four days per week. Family child care providers offer care to children of different ages in their home. On average, a family child care provider is able to serve six children, with no more than two children being under the age of 2. Head Start programs serve 3- and 4-year old children, while Early Head Start programs serve children birth to 3 years. A child may be double counted. For instance, two programs coordinate -- one providing the morning program and one providing a program in the afternoon in order to fill a full working day. Currently, the Department of Education, OCCS and ACF have no data on the percentage of children attending more than one program.

Chart 2



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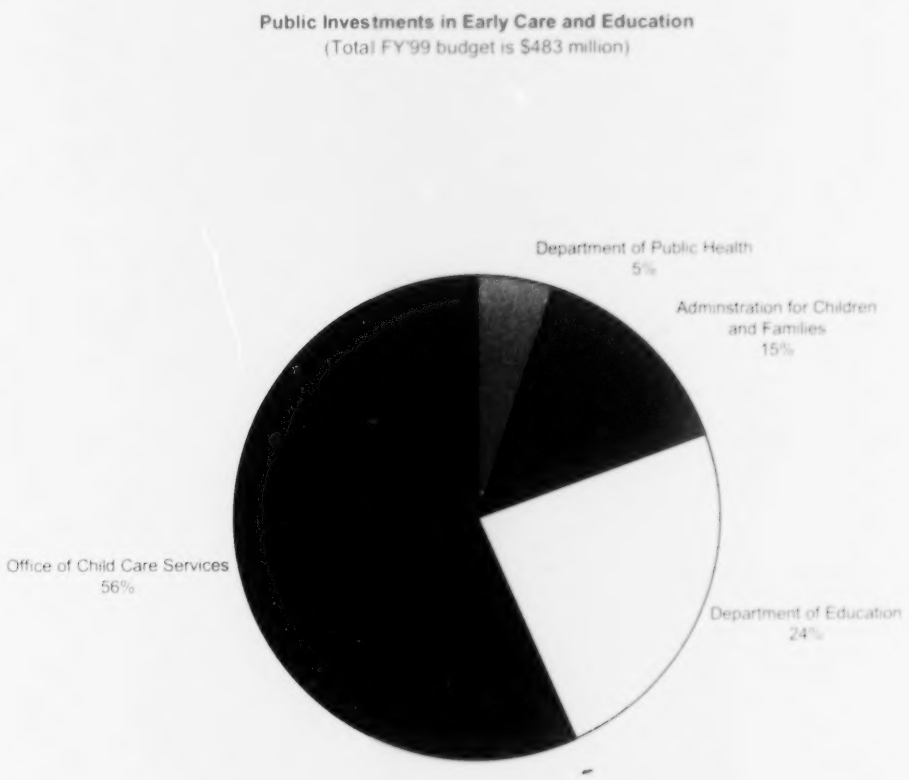
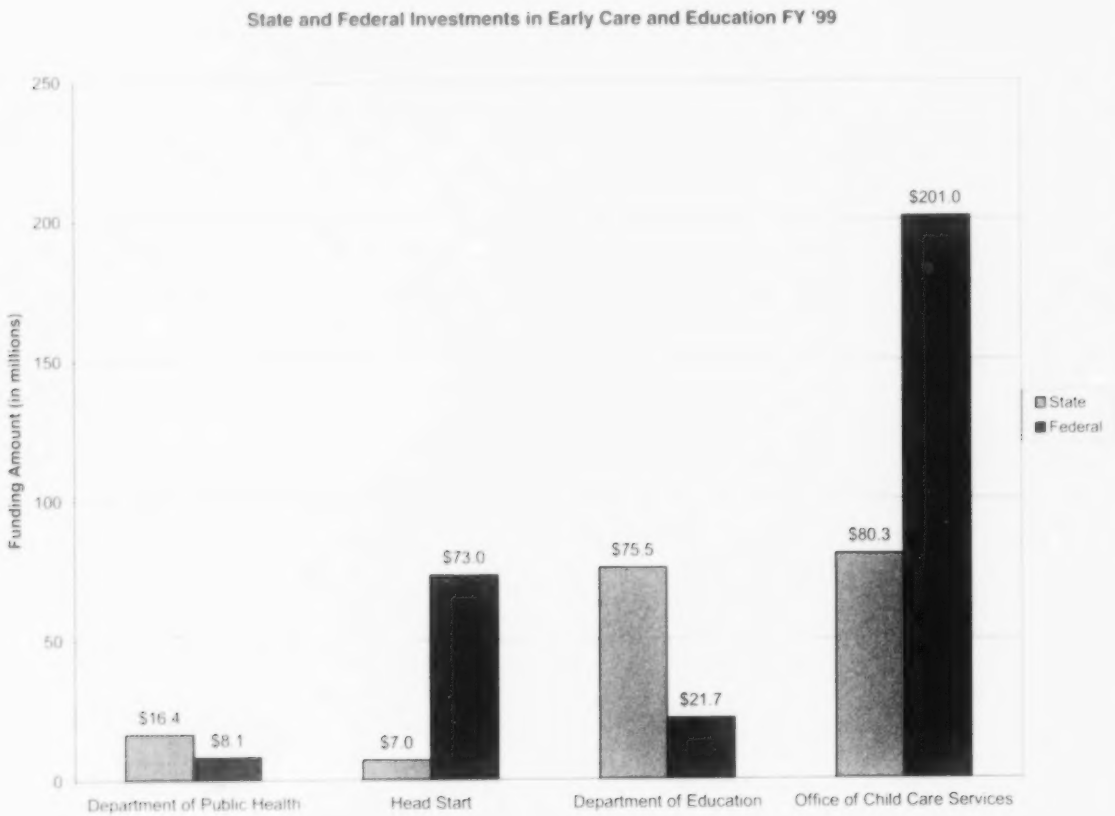
Who Funds Early Education and Care: Parents are the primary funding source for early education and care, providing about 65 percent of the total funds spent. Federal and state programs for early education and care are administered through four agencies: the Administration for Children and Families (federal Head Start and child care subsidies); the Department of Education (early childhood special education, Community Partnerships for Children, Head Start Expansion and Salary Enhancement grants); Department of Public Health (Early Intervention); and the Office of Child Care Services (income-eligible vouchers and slots, transitional assistance, child protective services and teen parent care). The total amount of state and federal funding administered by these agencies is $483 million. In comparison, state and federal funding for public schools, kindergarten through third grade (K-3) is nearly three times as high at roughly $1.38 billion ($555.1 million in state and federal and an additional $825 million in local funds).

Chart 3



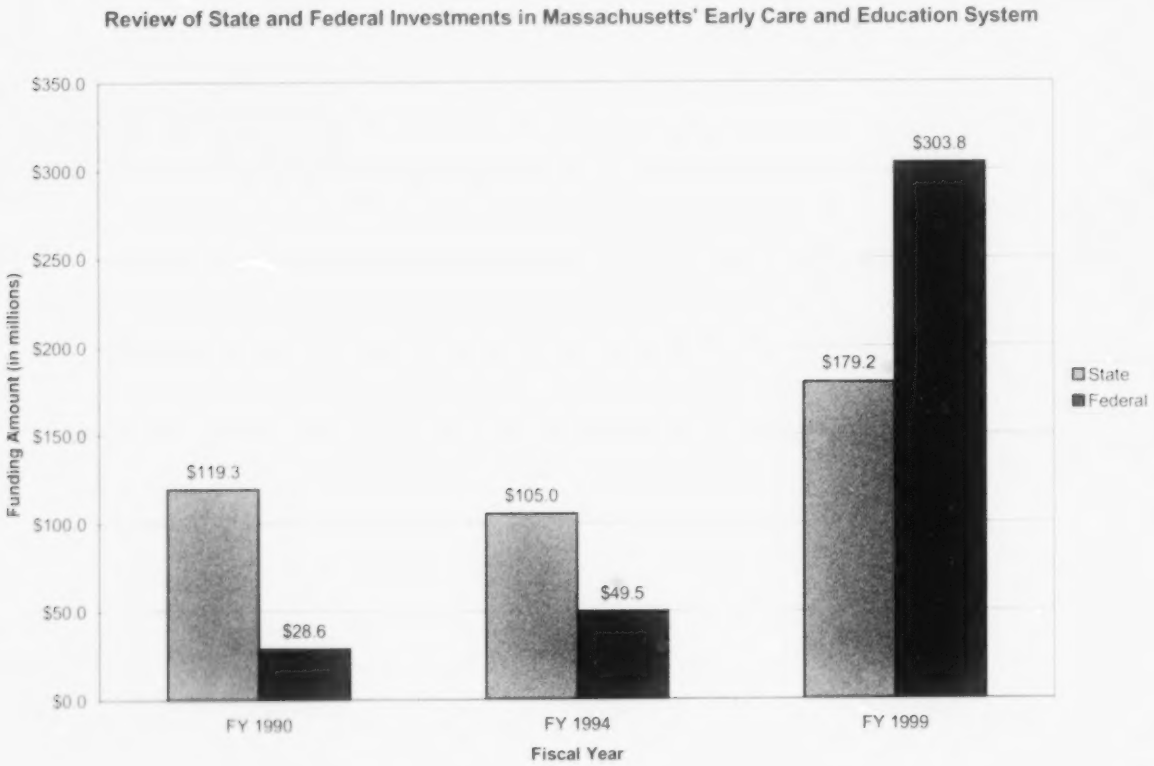
State and Federal Contributions to Early Education and Care: (Chart 4) Of the $483 million now invested in Massachusetts' early education and care system, 63%, or $303.8 million, comes from federal dollars. State dollars invested in the system total $179.2 million or 37% of the total investment. The Department of Education and the Department of Public Health are both largely funded by state dollars, while the Administration for Children and Families and the Office of Child Care Services are mainly funded by federal dollars (see Appendix B for distribution by agency).

Chart 4



Changes in State and Federal Investment Over Time: Both the state and the federal governments have recognized the importance of supporting families with young children. There has been over a 325% increase in early education and care funding in Massachusetts, from $147.9 million in FY 90 to $483 million in FY 99 (Chart 5). The state investment in early education and care has grown by 50% over the last 9 years while the federal investment has increased by 1000% or ten-fold. While the total amount of federal funds used for child care has increased over the past nine years, a substantial portion of this increase is the result of state initiatives to use TANF (welfare) funds to support child care. More than $125 million of TANF funds are used to support child care subsidies in Massachusetts. These funds are spent on income eligible families and for TANF recipients.

Chart 5



Early Education and Care: Supply, Demand and Funding

The following table illustrates the differences in the infant/toddler, preschool, and school age markets: the capacity for each age group compared with the subsidies available for each age group. Infant/toddler care is delivered more in family child care than in group care. Tuition paid by parents makes up three quarters of the infant/toddler market. The majority of preschoolers is in group care (private centers, public school preschools and Head Start). School-age children are primarily in center-based care in community centers and public schools. Clearly, the capacity and the availability of subsidies are greatest for the preschool-aged group.

Subsidized Early Education and Care FY '99

Age	Population[1]	Capacity[2] (% of population)	DOE: CPC #'s	OCCS: Income Eligible Vouchers	OCCS: Income Eligible Slots	ACF: Head Start Slots	% of Market that is Subsidized[3]	OCCS: In-home or relative care (ICC)
Infants and Toddlers (up to age 3)	235,722	35,100[4] (15%)	--	5,748	2,386	503	25%	1,515
Preschool (3 up to 5 years)	163,495	124,920[5] (76%)	18,100	13,909	5,743	11,374	39%	3,667[6]
School-age (5 – 12 years)	824,851	44,730 (5%)	--	11,094	3,763	--	33%	3,001

The middle area is shaded to set apart the columns pertaining to numbers of children served through different programs and which are considered when calculating the percentage of the market that is subsidized.

Variations in Capacity Across Communities: Substantial variation in the usage and supply of early education and care exists across Massachusetts (Map 1 and Appendix E). Two recent studies of Massachusetts' early education and care supply demonstrate a correlation between median family income of a community and supply of early education and care services (Fuller & Liang, 1994; Queralt & Witte, 1998). Specifically, controlling for the number of children and other demographic variables, more affluent communities have more programs available for their children.

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[1]Population figures are based on projected U.S. Census, 1997.

[2]Data include capacity for group day care, public school preschool, family child care, and school age settings. FCC capacity is reduced by 30% as not all licensed FCC providers are still offering care.

[3]Percentage of subsidized slots is determined by adding the number of income eligible vouchers and slots, CPC numbers, and Head Start children served, divided by the capacity for each age group.

[4]We estimate that 1/3 of the children in family child care are infants and toddlers.

[5] The capacity of family child care for children older than 2 has been divided between preschool and school-age children. Sixty-four percent of the family child care has been included in the preschool capacity while the remaining 36% has been included in the school-age capacity figure.

[6] Fifty-five percent of the total number of children older than 2 years who are in in-home/relative care (ICC; n=6,668) are preschool children and the remaining 45% of ICC vouchers are allocated to school-age children.

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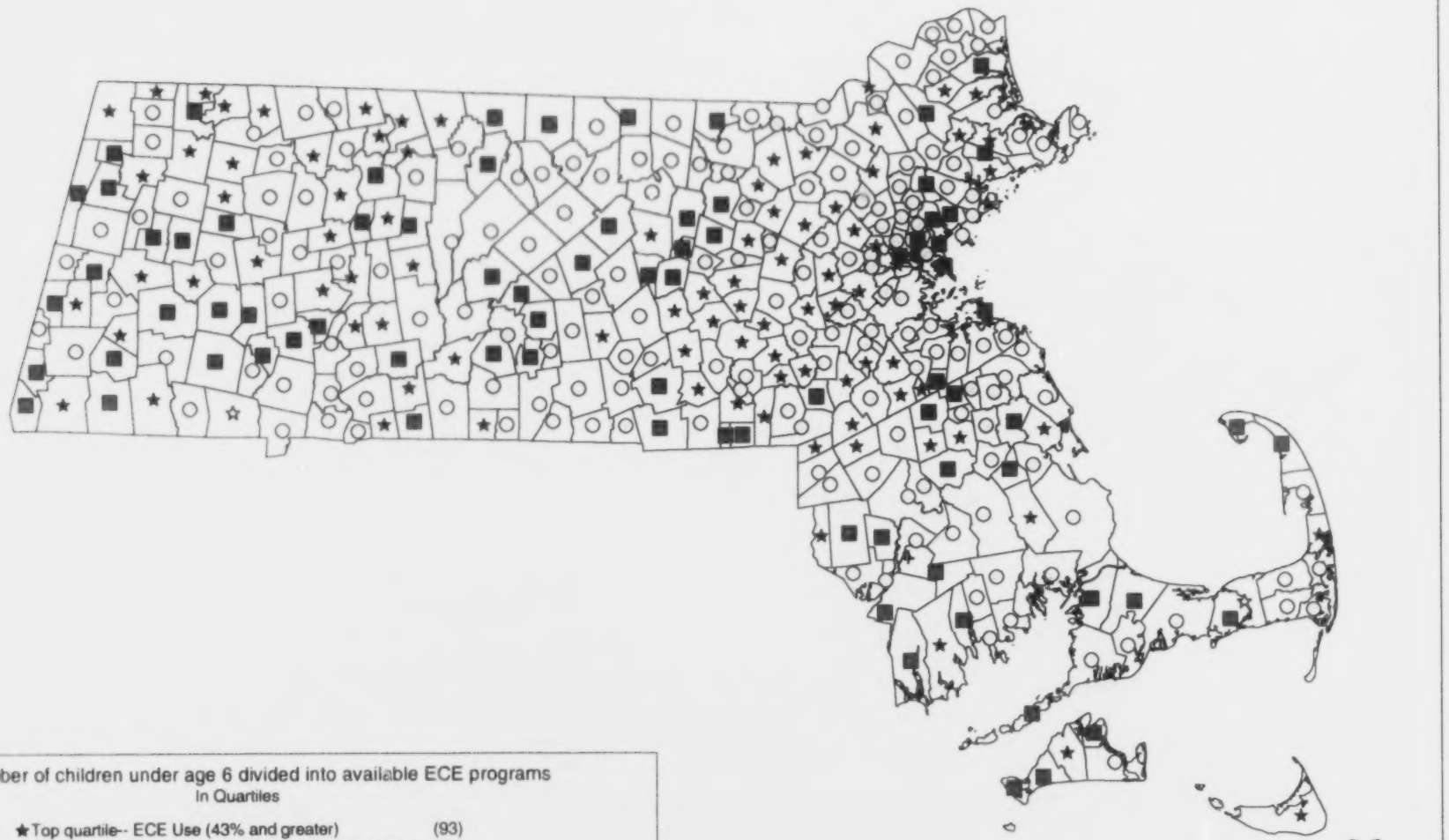
Early Education and Care in Massachusetts: Variations of Use and Availability by Community

(based on ECE spaces available per 100 children)

Sources:
1998 OCCS Licensing Records
1998 DOE Public Preschool School data
1990 US Census



The number of children under age 6 divided into available ECE programs
In Quartiles

★Top quartile-- ECE Use (43% and greater)	(93)
○Middle quartiles-- ECE Use (between 23% and 42%)	(176)
■Bottom quartile-ECE Use (23% and below)	(81)

Massachusetts Department of Education:
Early Learning Services (r)

The following points may be gleaned from the data:

- The current market is a mixture of public and private dollars with the majority of dollars coming from parent fees. Seventy-five percent of parents who use child care pay for all of their infant and toddler care; 61% pay for all of their preschool care; 67% purchase all of their own school-age care.

- Early education and care use varies dramatically by community. The national average of the percent of parents who use formal care and education programs is 50% (Kisker, 1990). In Massachusetts, in 25% of the communities, there is a capacity to serve only 23% or fewer of the children under age six, while in 25% of the communities, there is a capacity to serve 43% or more of the children. Only 47 out of the 351 Massachusetts towns have the capacity to serve 50% or more of the children in their community.

- The distribution of care is uneven both in the availability of care for particular age groups and the availability of care across communities. There is a much higher capacity for preschool age children (76%) than there is for infants and toddlers (15%) and school-age care (5%). Again, availability of care varies substantially by community.

Eligibility and Affordability: To understand the issues involved in funding a system of care and education, it is helpful to look at the cost of child care and the "affordability" for families. For example, the cost of an average early education and care program is $7,500 per year for a preschool-age child (Boston EQUIP, 1998). A high quality program may cost $8,500 or more. Infant and toddler care is even more expensive, costing from an average of $12,700 up to $15,600 per year (Boston EQUIP, 1998). Payments are required on a weekly or monthly basis, with only a short grace period of non-payment before a child is expelled from the program. When compared to various income levels, a measure of "affordability" of an average early education and care program for parents can be estimated and is demonstrated here:

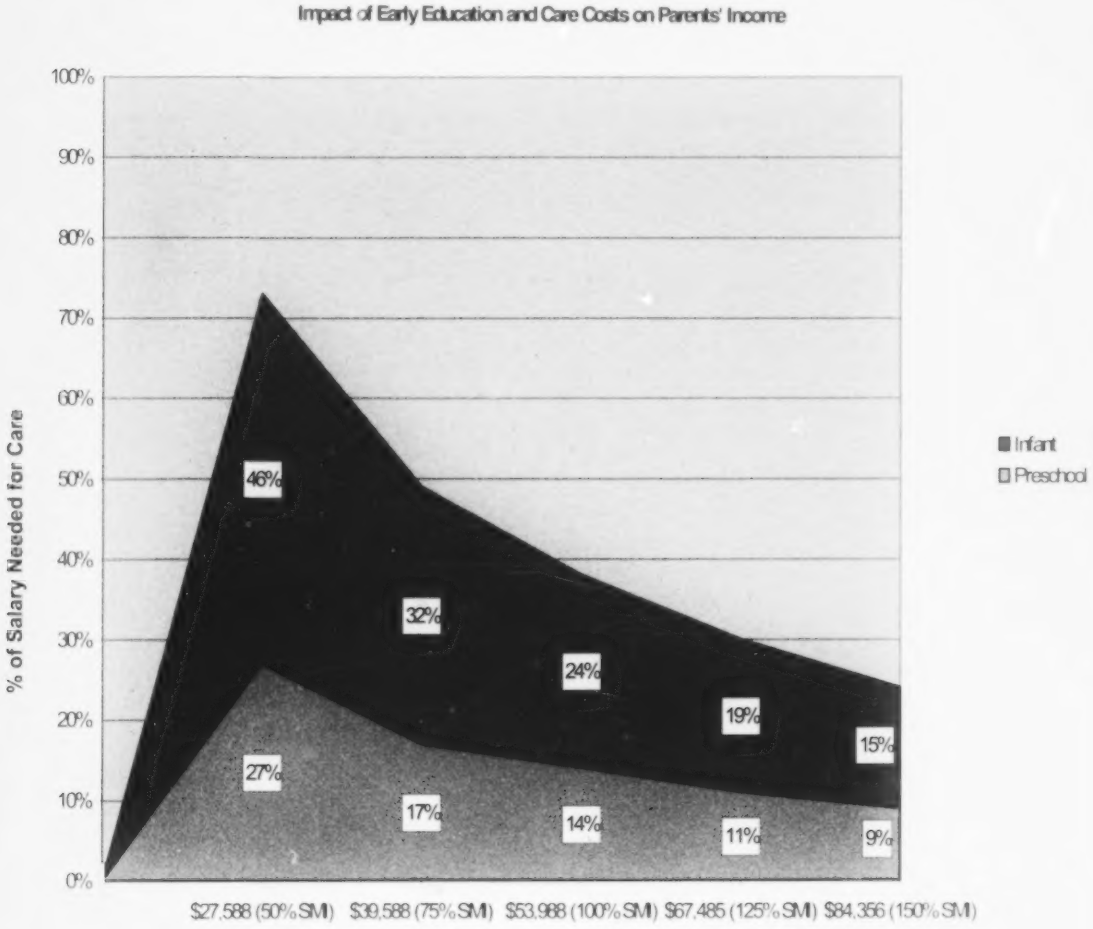
State* Median Income (SMI)	Yearly Salary**	% of Salary needed for care (preschool) (at $7500/yr.)	% Needed for care (infant) (at $12,700/yr.)
50%	$27,588	27% (of gross)	46%
75%	$39,588	17%	32%
100%	$53,988	14%	24%
125%	$67,485	11%	19%
150%	$84,356	9%	15%

* For a family of four
** Maximum in range

These percentages are based on the gross incomes. The cost of care is an average (which varies in different areas), not necessarily the highest quality. Researchers have estimated that early education and care becomes "affordable" or "worth it to work" when it consumes less than 15% of a family's income (a conservative figure -- 10% is closer to reality according to some) (Mills & Pardee, 1997). Money for child care has to come out of whatever is left over after basic needs are met – rent and utilities, health care, transportation, food, taxes, clothing and household expenses. As demonstrated in the last two columns and on Chart 6 below, full time early education and care does not become "affordable" until a family is earning over 100 percent of SMI if they have a preschool child and earning at least 150% of SMI if they have an infant. Finances are further stretched when there are two or more children under

school age. For a family to pay only 15% of their income for infant/toddler child care means that the income for a family of four must be $84,356. To afford a preschool program, income would have to be at least $53,988 for a family of four.

Chart 6



Many parents use part time programs by having one parent stay at home or work part time or by staggering work schedules. Both are strategies that will lower the cost. Part time care may be a choice parents make to increase the amount of time between parent and child, but these schedules may also not be what the parents want or need and can sometimes result in more stressful family life. For most families, full time child care is not a choice and decisions about length of day and in what program the child is placed are more likely based on economics and availability than on what is best for the child. Given the cost of early education and care, there is also a point where it does not make economic sense for both parents to work, resulting in an economic cost to society and a lower standard of living for the family.(Hofferth & Chaplin, 1994).

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Consider that parents of young children are in a similar position to parents of college students. Early education and care programs and higher education bracket the public school system, which is almost entirely subsidized by taxpayers. Tuition for college must be paid, but it is assumed that there will be loans, grants, long-term payment plans and other schemes that help families bear the cost. Yet, it is automatically assumed that families, during the years of their lowest earning power with children requiring 24-hour a day attention, will bear the total cost of early education and care with no assistance unless they are very poor. Subsidies that are considered routine for college are not available for young children and they are administered in different ways with very different expectations for return on investment.

Cost and Quality: To make matters worse (and more complicated), even at the costs listed above, the cost of care is still artificially low because staff are typically paid little over minimum wage regardless of their level of education or experience. Since quality is correlated with cost, programs charging higher tuition usually have higher quality (Helbrun, 1995). It is primarily the high quality programs that produce the positive benefits of early education and care. However, if early education and care providers were to be paid salaries more comparable to public school salaries, early education and care would become less affordable for parents. To make tuition affordable for parents, programs have to hire staff with lower qualifications or else hire more qualified staff who are supported by a partner with a more lucrative job with benefits. The low salaries enable affordable tuition for parents, but actually disguise the true cost of care. This means that child care teachers subsidize other women's work, while they themselves are working mothers (98% of child care teachers are female).

Nationally, child care workers earn an average of $6.12 per hour, lower than store cashiers and hired farm workers. Bus drivers earn an average of $11.56 per hour; secretaries earn almost twice as much as child care teachers; and public school kindergarten teachers earn an average of $19.16 per hour (Ctr. for the Child Care Workforce, 3/98). Massachusetts generally pays considerably more than the national average. In North Worcester County, the average starting salary for a child care teacher is $7.50 per hour and the highest hourly salary for a teacher is $10.50, while a public school teacher working at the preschool level may earn $33 per hour (Child Care Resources, 1998). In Hampden County, salaries were somewhat lower. Eighteen percent of teachers had left a job in the previous year (Preschool Enrichment Team, 1997), whereas in Boston the turnover rate in 1998 was 28 percent. Even outside of urban areas in Massachusetts, salaries are higher than the national average. However, there is no adjustment for cost of living in Massachusetts, which is one of the highest in the nation. It is easy to understand why it is difficult to hire and retain qualified staff. In the current economy, it is difficult for many programs to find staff at all.

Number of Children Still Needing Early Education and Care: The role of current subsidies in Massachusetts in this picture can be summarized as follows: one is most likely to receive assistance for early education and care if on public assistance or just entering the workforce. Head Start, TANF vouchers and low-income contract slots are all focused on the population with the lowest income. For those who are making low to moderate incomes, there is primarily one source of assistance – Community Partnerships for Children, which can support preschool-age children only. (Income-eligible contracts allow children to remain in programs until the parent(s) earn up to 85% of SMI). Although it is important to assist the neediest families, it is also important to help families stay out of poverty. The cost of early education and care can be the item that pushes a family into poverty and onto public assistance.

Many children who could benefit from an early childhood program do not fit into current eligibility criteria because all resources are based solely on income or the work status of the parent(s). Some of the children who benefit most from early childhood programs may not meet any of the criteria of current programs, yet these are the children that save society the most from the early intervention. Although low income is one good indicator of need, there are a variety of risk factors besides income that call for the intervention or prevention provided by a high quality, comprehensive early education and care program.

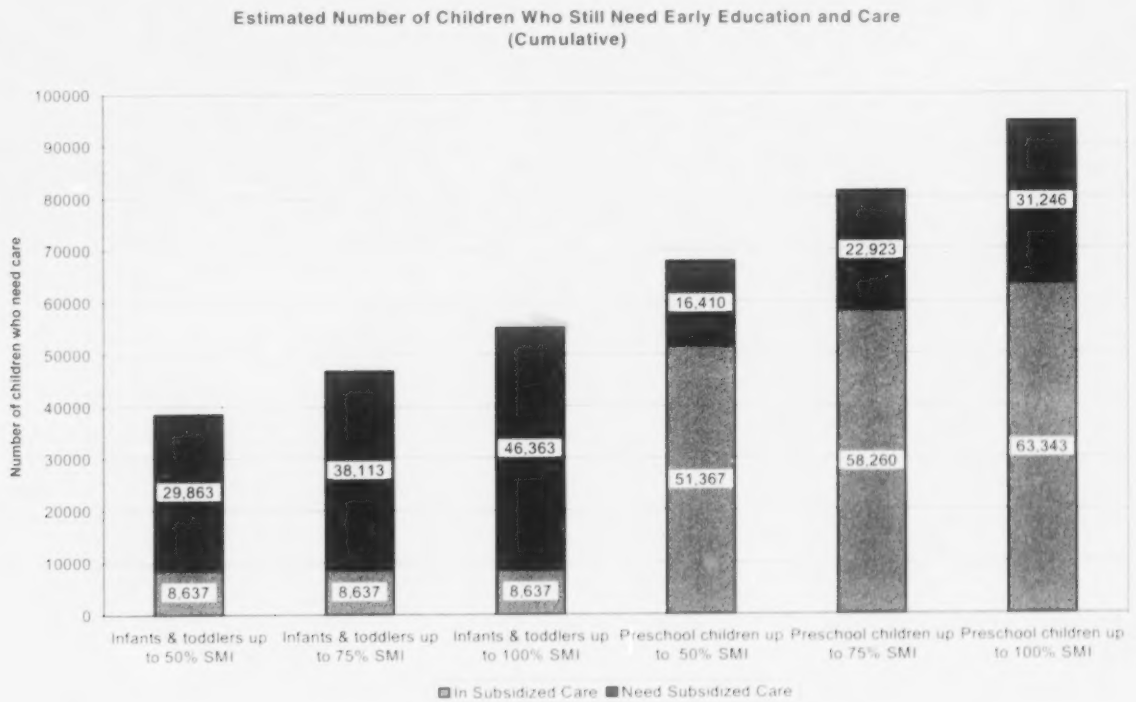
Premature birth or low birth weight, inadequate nurturance or nutrition, witnessing domestic abuse or other violence, having a parent or sibling with a mental illness, disability or chronic or terminal illness, being in an isolated environment, and homelessness are all factors that need to be considered whether or not the parents are working. A community early education and care system must be able to provide assistance to such children even if they do not meet any of the current eligibility criteria.

Availability of care and education subsidies varies considerably depending on the age of the child and family income (see Chart 7). For infants and toddlers, there is primarily one source of subsidies, OCCS vouchers and contracts. Currently no funding exists for families whose income is above 50% of the SMI. An estimated 29,863 infants and toddlers below 50% of the SMI need care, and an additional 16,500 families whose incomes are between 50-100% of the SMI need care (see Endnotes for calculations and assumptions).

The story for parents with preschool children is better due to the more generous eligibility criteria of Community Partnerships for Children. Current funding to provide subsidies for families with an income of 50% SMI or less is not sufficient to meet the needs. An estimated 16,410 children are still in need of care. Furthermore, families with an income between 51% and 100% SMI also need access to subsidies, resulting in an additional 14,836 children in need of care. Currently, the Community Partnerships for Children program is the primary resource for families earning between 50% and 100% of SMI. (Numbers are based on children between the ages of 2 years, 9 months and 5 years, 3 months and are not restricted to children of working families.)

Chart 7

Estimates are based on national use patterns as well as patterns of use in more affluent communities where choice is not constrained by income. The following chart sets need at between 25-30% for infant & toddler care and 60-65% for preschool care (see Endnotes for calculations and assumptions).



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These estimates of need are much higher than the OCCS waiting list for children in families earning 50% or below the SMI. For example, OCCS currently projects that there are 2300 preschool-age children on their waiting list for subsidized care. The numbers above are much higher because these estimates consider need under more ideal conditions than currently exist. We project that a much higher percentage of the population would use high quality care if it were available to them. For example, where early education and care choices are not constrained by income or supply, the market is more responsive and better reflects parents' choices. In affluent communities (Acton, Lexington, Newton and Weston, for example), there is an average of 63 slots per 100 children versus the state average of 34 per 100 children and their capacity is used. This pattern of high usage is true in European countries where programs are universal.

Current Data Collection Initiatives

The data presented so far identify a place to start understanding what is happening statewide and where the gaps in services and policy exist. A coordinated system of data collection would allow the state to address needed adjustments. There are several efforts currently underway to bring us closer to this understanding:

Interagency Data Collection Task Force: Data collection specialists and policymakers from the state and federal early education and care agencies have formed the Interagency Data Collection Task Force to address the issues that have emerged relating to early education and care. The Task Force is comprised of members from the Administration for Children and Families (ACF), Massachusetts Department of Education (DOE), Massachusetts Department of Public Health (DPH), Office of Child Care Services (OCCS), the state Budget Bureau and members of legislative offices. Members of this group bring to the table their knowledge of the data collected within each agency and how the data fit (or do not fit) together to create a picture of early education and care services.

As the Task Force examined the data collected at the state level, it is clear that a significant amount of data on early education and care services exist. However, each agency's data are disconnected to other agencies' data. Lessons learned from the work of this group echo many of the findings of this report:

- Agencies define units of measurement differently when collecting data (e.g., slot vs. child) and collect data at different times (monthly vs. yearly).

- Different eligibility requirements exist across different programs, making it difficult to determine how to collapse and interpret the data.

- Regarding supply and demand, no agreement has been reached about the standard for capacity or level of services that should exist in each community. For example, is it enough that a community has 50 slots for every 100 children, or should the standard be 75 slots for every 100 children? Might the standard be different for different types of communities or areas? How can it be determined how many children or slots need to be subsidized?

- The state lacks sufficient data on the quality of programs and services. More information is needed on the structural indicators of quality that are correlated with positive developmental outcomes for children, such as group size, staff turnover, teacher-to-child ratios, staff salaries and qualifications and training needs.

The Interagency Data Collection Task Force is focused on strategies for refining data collection efforts with the end result being a more coordinated and collaborative system of data collection. Strong policy can only be developed when clear data inform policy decisions. In order for this group and other

interested parties to move the early education and care system forward, better data are needed at both the state and local levels. The Interagency Data Collection Task Force is the appropriate group to do this at the state level.

Integrated Child Care Management Information System: In FY 98, subsidized child care funding and functions were consolidated under the Office of Child Care Services, with the exception of DOE's Community Partnership program and the federal Head Start program. In addition to streamlining all child care intake, eligibility determinations, placement, and billing functions, OCCS began to develop an integrated, automated child care information management system to collect income, child care service need and related ethnic and demographic information on all the families and children in subsidized care. The system also includes those unsubsidized families seeking child care information and placements from Child Care Resource and Referral Agencies (CCR&R). The Office for Child Care Services is building a Web application that will automate the formerly paper-based administrative processes as well as allow data sharing between OCCS and other agencies that authorize child care such as the Department of Transitional Assistance (welfare-to-work programs) and the Department of Social Services (supportive slots for at-risk children and families). This system, to be used by the CCR&R and all child care providers serving these families, will allow the tracking and analyzing of child-level data as families move through the subsidy system. It will provide research and planning opportunities for government to estimate child care needs and plan future funding allocations as well as fulfill federal requirements for automated data submission to federal data banks for child care research.

The system is designed to allow the addition of other early childhood programs with different eligibility rules and income guidelines. OCCS and DOE will work together to pilot test the task of incorporating CPC data into the Child Care Management Information System. In addition, early childhood information and other relevant data, will be linked to the Department's Student Information Management System (SIMS), so that the long-term effectiveness of early childhood programs can be assessed.

A Local Systems Approach -- Community Profiles: There is a growing body of literature and consensus supporting local governance and community collaborations in the field of early education and care (Dombro et al., 1996). Sharon Lynn Kagan, president of the National Association for the Education of Young Children and author of *Not By Chance* (1997), a comprehensive guide for creating an early education and care system, lists a series of recommendations for creating and improving the system:

- Develop a system that favors incentives, technical assistance, and results-based rewards, not one that relies on command-and-control enforcement of requirements.
- Develop collaborative advocacy by parents, professionals, and other community stakeholders, not by professionals alone.
- Develop a long-term vision of early education and care, not a series of short-term solutions.
- Finally, think of improving early education and care as a challenge that hinges on rational analysis and planning, not random acts of chance.

Given the lack of uniformity in the early education and care data currently collected, a more systematic and uniform data collection strategy is needed. Using Kagan & Cohen's (1997) recommendations and the research presented above as guiding principles, the Department of Education developed the Community Profiles Project. This project assesses the early education and care system and its quality through data collection. The Community Partnerships for Children program has created local planning councils covering 330 communities in the Commonwealth. Since CPC exists in so many communities, the Councils have been chosen as the vehicles for data collection.

The Community Profiles Project was created to:

- Create thorough and systematic data on the quantity and quality of the early education and care system across the Commonwealth.
- Assist local planning efforts.
- Strengthen and augment the (OCCS) Child Care Information Management System.
- Increase collaboration at the state and local levels across the early education and care system.

Community Profiles are modeled on the work of Boston EQUIP (see Appendix C), a national community-based, data gathering project managed by Associated Day Care Services and created by the Families and Work Institute. Community Profiles are being field tested by the Department of Education in collaboration with local communities and other state and federal agencies. Building on already established state and local infrastructures created by the Community Partnerships for Children program, the project is designed to assist local CPC programs to conduct needs and strength assessments on an ongoing basis. (See Appendix D for description.) At the local level, the project will allow programs to be more thoughtful in their planning, more accountable to gaps in services and more responsive to community goals. Furthermore, their data, when aggregated, will allow state and federal agencies to target dollars to identified areas of need and to address some of the problems identified by multiple reports as well as the Interagency Data Collection Task Force.

The jointly-developed instruments will help communities examine both the quantity and the quality of their early education and care system, including public school preschool and kindergarten, Head Start programs, licensed private centers and family child care home programs that serve children birth through school age. The surveys are derived from national, reliable and valid surveys that measure structural indicators of quality associated with positive social and emotional gains in young children. (For additional information on the instruments and process, see Appendix D).

Based on feedback from the 33 pilot sites (see Appendix D for list), the timeline on the next page has been developed for Phase I in 1999.

Schedule for Phase I, 1999:

Task	*January*	*February*	*March*	*April*	*May*	*June*	*July*	*August*
Administration of center-based surveys								
Center-based surveys due to DOE			X					
Administration of the family survey								
Family survey due to DOE				X				
Data entry and analysis								
Analysis of the center-based surveys due to pilot sites				X				
Analysis of the family survey due to pilot sites					X			
Revisions of survey instruments								
Create report based on data from pilot study							X	

After the instruments and process have been pilot tested, Phase II of the project will be expansion statewide. The surveys will be used by all CPC programs for their own needs assessments, which are conducted on a biannual basis. These profiles will then be compiled statewide. Given the timelines of this process, the Department anticipates having comprehensive statewide data biannually beginning in Fiscal Year 2001. Next fall (1999) the Department of Education, with the assistance of the Community Profiles pilot communities, will issue a status report of the quality and other aspects of early education and care in the state.

This method will provide the state with a mechanism to collect data on what is happening in the early education and care system and on the quality of programs. The Community Profiles process will expand the involvement of CPC programs in statewide data collection. Given the increase in CPC funding in recent years, the Community Profiles process will provide local CPC programs with the tools to carry-out thoughtful planning while also supporting a mechanism for statewide data collection. By creating a systematic way of collecting rich data at the local level, the state will have, at minimum, the following information:

- Accreditation status of all early education and care providers
- Average staff salaries
- Data on the subsidized and the non-subsidized system of early education and care

- Extent of parental involvement
- Facilities information and needs for renovation and/or expansion
- Family demographics, including size, income, employment status, and education level
- Staff education levels and qualifications
- Staff training needs
- Supply or capacity of and demand for early education and care services
- Technological capacity

Once baseline data has been collected, subsequent data will allow the state to develop benchmarks for services and quality and to create a mechanism for improving and monitoring the system. Local data collection will pave the way for a statewide effort that could be supported by all the agencies that monitor and administer the early education and care system.

The eventual system, starting with the OCCS Child Care Management Information System combined with DOE's Student Information Management System and Community Profiles, will provide the kind of information that can measure progress and provide the information needed to move to the systemic approach described by Kagan (1997). The information system will be capable of:

- Monitoring the quantity and quality of the system
- Informing local planning efforts
- Designing effective policies
- Setting benchmarks to improve the system

Conclusions and Recommendations

Recent advances in science demonstrate that the early years in life are the most critical in children's brain development and growth. The brain's largest growth spurt is from birth to age six. During these years, children's brains are at their most impressionable (or "plastic") phase. Research now explains what parents and other observers have known for millennia -- how much and how fast children learn in the earliest years. It is in everyone's interest to ensure children's optimal development during that time.

At a time when there are growing numbers of two-parent working families as well as single parents in the work force, an increasing number of young children are spending much of their days, their learning time, in early education and care programs. Ample research has documented the long term benefits of early education and care programs, particularly for children without an enriched environment in their homes. Research has also demonstrated that high quality early education and care has a profound impact on the child's success in school and life as well as providing savings for society. However, the research also informs us that this care must be of high quality. This combination of facts indicates that investing in comprehensive, high quality early education and care is essential to the health and wealth of Massachusetts and its citizens.

Early education and care is a rapidly expanding field. State and federal investment in Massachusetts is over a half a billion dollars, although even more is paid by parents. About 132,400 children between birth and age thirteen[4] participate in some kind of early childhood or school-age program. The supply and demand for programs varies according to age group and geographic location. Infants and toddlers receive the least amount in subsidized funding (25% of the market is subsidized), while preschool receives the most (about 40% is subsidized). The capacity to serve children (the supply) is greatest in more affluent communities.

Early education and care programs, particularly those of high quality, are not affordable for most of the families who need it. If a family earns less than 100% of the State Median Income (SMI), a full day, full year preschool program will consume more than 15% of their gross earnings. If a families earns less than 150% of the SMI, full time care for their infant will consume more than 15% of their gross earnings. However, most subsidies are only available for families earning less than 50% of the SMI. There are an estimated 46,363 infants and toddlers, and 31,246 preschool children, whose families earn less than 100% of the SMI but who do not receive any assistance. These estimates are considerably higher than reflected by the OCCS waiting list because these estimates are based on usage rates in an open market rather than choice constrained by the availability of subsidies.

Early education and care is provided in private centers, family child care, public school preschool programs, Head Start, Early Intervention programs -- all of which have different funding and/or licensing agencies. Financial assistance is administered by several agencies through a number of different programs with varying eligibility criteria, target populations, age groups and accountability procedures. The largest funder is the Office of Child Care Services (56%). The next largest funder is the Department of Education (24%), followed by the Administration for Children and Families (15%) and the Department of Public Health (5%). Federal government accounts for 63% of public funds. Federal spending has increased 1000% since 1990. State spending has grown by 50% in the same time period.

Without good data that cut across programs it is impossible to formulate appropriate child outcomes or results that would indicate to what degree early education and care is successful in ensuring that all

[4] This includes only children in OCCS-licensed child care programs and OCCS funding for those children. There are many other after school programs serving children 5-13 through the public schools, recreation departments, etc.

children enter school ready to learn. Currently, the state does not collect the data needed to evaluate basic services or program quality. Data are collected in different ways by different agencies with different purposes in mind. There is only fragmented information on teacher salaries and educational qualifications, or wait lists for non-subsidized programs. Good data are an integral part of developing a system that will realize the potential of early education and care for prevention and intervention.

Given the information that has been compiled in this report, there are two general recommendations, with some specific strategies to address those recommendations. First of all, it is vital to develop a system that is easy to use from the parent's perspective. It should be clear how to enter the system, how to find informed assistance in choosing a program or finding family support services and how to secure financial assistance if it is needed.

#1 Expand services and equalize access for families with children who need education and care programs.

- Expand infant/toddler care: There are an estimated 46,000 infants and toddlers whose families need financial assistance to afford early education and care that will allow them to work and promote the development of their children. The cost of infant/toddler care is high – on average, $12,700 per year for full day programs. Often families would prefer that one parent stay home with an infant. Given the cost, it would often be less expensive for the state to support parental leave, tax breaks and other strategies to support parents to stay at home. Family education and support services are particularly important for families with very young children. The Infant Toddler Services Summit's report of January, 1999, presents a comprehensive view of the needs of that age group along with suggested directions for expanding services.

- Review the need for additional preschool services: The best-served age group is preschoolers. Some CPC programs report that they are serving all eligible preschoolers except children whose families do not fit all CPC criteria – children "at risk" with at least one parent who does not have a job or who is in training. Other communities, usually the larger cities, continue to express need for additional subsidies and services for 3 and 4 year old children. If all 3 and 4 year old children of working families are being served communities should be allowed the option of using their Community Partnership funds to extend services to preschool children "at risk," infants and toddlers, and school age children.

- Increase the number and quality of full day kindergarten classrooms: Although kindergarten lowers families' child care costs, the system of half-day kindergarten is not good for either children or schools. Children may have to go from a full-day preschool program one year into a 2½-hour kindergarten program, and may have to be transported from one provider to the school back to a child care provider or even to a third provider. Kindergarten teachers often teach two sessions, each with up to 25 children. Although opinions and expectations developed in kindergarten may affect children for years after, this is the year when teachers are least able to individualize curriculum and attention because of the number of children they have in the classroom. Full (school) day kindergarten could be phased in across all districts over a period of a few years. Funds should be provided to ensure appropriate class size and teacher/child ratios to implement the Curriculum Frameworks.

- Expand school-age programs: This review also found a strong need for additional assistance for school age children and for better coordination of existing programs. Currently, the Community Education Task Force is developing plans to address the needs of this group. This is a positive and much needed action to support the needs of school aged children. The group has developed and filed legislation to expand services.

#2 Create a comprehensive system of early education and care that is family friendly.

- Improve data collection of the early care and education system for policy development: The state is moving in the right direction in coordinating services and data. DOE and OCCS should continue to collaborate to make their emerging systems compatible. The Interagency Data Task Force should create a system to compile and exchange data across agencies to improve policy development. Information on capacity will be provided by Community Profiles to suggest a standard for capacity in a community to address inequities across the state. The Child Care Management Information System shows promise for tracking placement, hours and rates as well as the progress of individual children. DOE and OCCS should work together to develop compatibility with the Department of Education's individual tracking system so that children's progress can be charted starting before entrance in the public school system.

- Create a task force to construct a long-term financing scheme for Massachusetts' early education and care system: This task force should include parents, economists, the business community, and providers. The charge of the group would be to develop recommendations and benchmarks for adequately-funded programs, combining parent tuition, public subsidies and private/alternative funding sources. These recommendations would include a plan for funding that raises compensation and benefits for early education and care staff, streamline eligibility criteria and the rate structure. Furthermore, the system must develop funding mechanisms that assure both affordability for parents and high quality services.

- Establish consistent standards and goals for quality: Quality is the key to the preventive and interventionary power of early education and care programs. More assistance is needed to address the elements that constitute quality, including staff retention, professional development, capital improvements, and materials and supplies tied to appropriate curriculum. Community Partnerships for Children provides considerable assistance in helping programs become accredited and for providing professional development opportunities to programs serving preschool aged children. Additional assistance to improve quality should be made available for programs serving children birth to 3 and ages 5 to 14. Because the field is a low-paying one, it is difficult for most programs to attract and retain well-trained staff. A plan for increasing the educational levels and salaries of staff is essential to attaining the necessary level of quality.

- Develop a set of child results and benchmarks: Results for young children must be carefully selected to support their development. The standards for early childhood programs being developed by the Early Childhood Advisory Council are adapted from the Curriculum Frameworks. They guide programs in supporting children's development in different domains, including cognition, language development and motor growth. Explicit statewide goals or benchmarks should be established for other areas essential to children's development, such as improving health care, lower teen birth rates and other family-related indicators.

- Develop a public education initiative: A public education initiative would increase knowledge of child development and the long-term social benefits of early education and care and the need for trained staff to care for young children. Particularly high school and college students, young adults and new parents need to understand child development, the value of early care education and how to identify quality in early childhood/school age programs.

Massachusetts has made significant progress in creating a system of early education and care. To make more progress we need to engage families, communities, business and state government in joining their common interests in the healthy development of children and their success in school.

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Endnotes

[1] This estimate is based on multiplying licensed capacity by an estimated usage rate (90% for group day care, 80% for family child care, and 90% for school age care) and subtracting an additional amount for multiple use of slots (10% for group day care and family child care). In addition we estimated that only 70% of the licensed family child care providers are currently offering care at this time. For example, we estimated that of the 106,227 licensed preschool slots, 90% are in use and that 10% of the slots are used by more than one child (106 *.8). No adjustment was necessary for preschool age children in the public schools. Note that this estimate does not include the 79,163 children in public school kindergarten programs, nor does it include the 8,183 children in relative or in-home care, funded by the Office for Child Care Services.

Chart 6 Calculations and Assumptions

Estimate the number of infants and toddlers who need care:
Our estimates are based on the following assumptions. Out of the estimated 220,000, infants and toddlers (children between the ages of birth through 2.9) in Massachusetts, 70% are at or below 100% of the State Median Income (SMI). Of these 220,000 children, an estimated 70% or 154,000 are below 50% of the SMI. An additional 66,000 infants and toddlers are between 51% and 100% of the SMI. The base of 220,000 is derived from 160,000 one- and two-year olds and an additional 60,000 children between 2 and 2.9.

Second, we estimate that 30% of the families at or below 50% of the SMI will use ECE services. This is based on the high number of single parents in this group coupled with the 20% national use rate (Hofferth, 1996). We use a 25% use rate from families between 50% and 100% of the SMI. For example, for infants and toddlers whose incomes are up to 50% SMI we estimate that, 29,863 (38,500 minus the number of infants and toddlers who receive subsidies) 8,637 need care. For families whose income is between 50-100%, we divided the children and need equally. For example, of the 66,000 infants and toddlers, we estimate, 16,500 will need care (66,000 x .25). Hence an additional 8,250 families between 50-75% of the SMI need care and an additional 8,250 between 75-100% of the SMI need care.

Third, supply is estimated by combining the number of OCCS vouchers and contracts for infants and toddlers. Children who use In-Home or Relative Care (ICC) are excluded from this chart.

Estimate the number of preschoolers who need care:
Our estimates are based on the following assumptions. Out of the estimated 212,800, preschool age children, 70% are at or below 100% the State Median Income (SMI). Of these 148,960 children, 70% or 104,272 are below 50% of the SMI. An additional 44,688 preschool age children are between 51% and 100% of the SMI. The base of 212,800 is derived from 160,000 children ages 3 and 4 and an additional 26,400 children between 2.9 and 3 and an additional estimated 26,400 children between the ages of 5-6 who use preschool age care.

Second, we estimate that 65% of the families at or below 50% of the SMI will use ECE services. This is based on the high number of single parents in this group coupled with the 50% national use rate. We use a 60% usage rate for families between 50% and 100% of the SMI.

Third, supply is estimated by combining the number of OCCS vouchers and contracts, DOE's CPC slots, Head Start services, and the 20, 827 children who are in public school preschool programs (see Table 1).

Note: Some of the care used is duplicative, meaning that some children will use more than one type of care, i.e., Head Start part-day and then a wrap around slot funded by DOE. However, supply is overestimated in that part day slots are counted as equivalent to full-day care. Children who use In-Home or Relative Care (ICC) are excluded from this chart.

Sources:
Department of Public Health birth records, 1998
Office for Child Care Services, number of children receiving contracts, vouchers, and supportive care, 1999
Department of Education, number of children using CPC slots, 1998

Appendix A: Definitions of Terminology in This Report

- **Early education and care** is a broad term that refers to all of the kinds of programs listed below. The term includes a variety of settings that educate and care for young children and implies a system of programs that provides choices for parents who entrust their children to outside caregivers. Use of this term often implies a recognition that much of what young children learn cannot be separated from the relationships with caregivers and the basic routines that make up the life of a young child. Early education and care can prevent future problems and be an effective intervention for children with disabilities or at risk of having learning problems.

- **Child care** refers to organized care for children either before they are old enough to enter school or before or after the school day. Child care programs most frequently operate on a full workday, full-year schedule. The programs are usually privately owned and may be non-profit or for-profit. Child care programs originated in the day nursery movement during the 19th century. The intent of that movement was to provide a safe environment for children of single mothers who had to enter the work force. As the 20th century progressed, the curriculum and expectations for child care programs progressed also. Child care came to mean more than custodial care. It became a professional field. Child care programs typically implement child-centered curriculum similar to Head Start and preschool/nursery school. Child care programs are licensed by the Office of Child Care Services (OCCS).

- **Early Intervention** is administered by the Department of Public Health and is the name of the birth to three section of the Individuals with Disabilities Education Act (IDEA). The programs provide services designed to intervene with one-on-one services for children with or at risk of developing disabilities.

- **Even Start** is administered by the Department of Education and is part of the federal Title I program. The program is primarily a family literacy program, but one of the components must be an early childhood program, so some children are served in early education and care programs supported by Even Start. The other required components are parent and child activities and adult education.

- **Family child care** is provided by a person who has a license from OCCS to care for children in the home. It provides a more intimate setting than a center-based program. Family child care is often the choice of parents with infants and toddlers because it is a more homelike setting with one consistent caregiver.

- **Head Start** is a preschool model created in the 1960's as an anti-poverty program with the goal of giving children growing up in poverty an equal start with children from middle class homes who attended nursery school and had other benefits. The program is primarily federally funded, includes comprehensive services (education, nutrition, health and social services, etc.) and intensive parent involvement in combination with a child-centered curriculum. It is administered by the regional office of the Administration for Children and Families (ACF). Programs are licensed by OCCS.

- **Early Head Start,** also administered by ACF, is a program for infants and toddlers. Currently, the program can only be found in a few sites in Massachusetts because of very limited federal funding for the program. It is intended to provide care for very young children, under the same eligibility criteria as Head Start.

- **Infant/toddler care** is the term used to refer to programs for children under the age of three. "Infants" are children up to about one year. Infants may be placed in a family child care home or private center as young as two months. "Toddlers" are children from 1 year until 2.9 – 3 years, at which time they would generally move into a preschool program. In this report, for clarity, children under the age of 3 are categorized as infants and toddlers.

- **Nursery schools** are usually half-day programs that operate during the school year. In the past they were considered enrichment or socialization programs for children before they entered kindergarten. Religious organizations and private providers run most nursery school programs.

- **Preschool** most broadly refers to programs that serve children from about 2 years, 9 months until they are kindergarten-eligible. It is sometimes used interchangeably with the terms, "nursery school" or "prekindergarten." Public schools have increased preschool services with the state and federal mandate to serve young children with disabilities and children at-risk of school failure. In this report, for clarity, children between the ages of 3 and 5 are categorized as preschool-age children.

- **School-Age care**, also referred to as Out-of-School-Time, refers to programs for children before and after the regular school day. Programs may be located in private centers or in the public schools. The programs in the public schools may be either run by public schools or contracted out to private programs. School age children are typically between the ages of 5 and 12. Privately run programs must be licensed.

- **Family Support**, which includes home visiting, parenting education, family literacy, health and developmental screening, support groups and play groups, is an integral part of a comprehensive system of early education and care. A system that provides support to families must start with prenatal care in order to realize the full benefits of prevention and intervention. There are a number of home visiting and family support programs administered by the same agencies that administer early education and care program. However, a discussion of this part of the system is beyond the scope of this report and will be a topic for the future.

Appendix B: A Summary of State and Federal Agencies Funding Early Education and Care Services

Agency	Program Name	Funding ($)	Age Range	Number Served	Target/Eligibility
Department of Education	Community Partnerships for Children	75.5 million	2.9-5 years	18,100	• Working families-100% SMI • At-Risk families/children - 50% of SMI or other factors • Low income districts • Disability
	Early Childhood Special Education	9.0 million	3-5 years	8,000	3-5 year olds with identified disability
	Head Start Supplemental grant	5.1 million		31 Head Start grantees	Working in Head Start Program
	Head Start-Expansion grant	2.0 million		450	Head Start Eligibility
	Even Start	1.8 million	0-7 years	325 families	Low income families who are either illiterate, unemployed, limited English proficiency or have other need related indicators
	Title 1	10.9 million	Mostly 4 years olds	5,475	Residence in Title 1 school area
Office of Child Care Services	Vouchers	145.0 million	0-13 years	30,751	Parents on TANF or 1st year after
	Low-income contracts	67.0 million		7,960	Working/training families earning 50% of SMI
	Informal care	14.4 million		8,138	Parent receiving TANF
	Child Protective (Supportive)	43.7 million		3,980	Family Preservation
	Teen Parents	11.2 million		637	Teens with children
Administration for Children and Families (Federal)	Head Start	69.0 million	3 &4 years	11,374	Low-income/federal poverty level (about 25% of SMI)
	Early Head Start	4.0 million	0-3 years	503	Same as above
Department of Public Health	Early Intervention	24.5 million*	0-3 years	20,725	Disability or at-risk for disability

*Includes funds for both generic Early Intervention services as well as specialty services for children with:

1. Autism/PDD
2. Blindness
3. Children identified through the Newborn Hearing Screening

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Appendix C: The Boston EQUIP Project

In 1994 the Boston child care community received an award for $150,000 from the Families and Work Institute to create a "Quality Audit" of their child care delivery system. Based on business principles espoused by AT&T, the funder of the project, Boston's charge was to create a process that would allow providers, advocates, and parents the ability to evaluate quantitatively the quality of their child care delivery system. This project was named the Early Education Quality Improvement Project (Boston EQUIP) and is managed by Associated Day Care Services, a local community-based child care agency. From this quantitative evaluation, Boston EQUIP was charged to create some concrete benchmarks and interventions to improve the quality of services.

Briefly the data collection efforts include, a supply and demand analysis, parent focus groups, and a provider survey. The supply and demand analysis contrasts the number of children who need care with the availability of full and part-time slots, by neighborhood. This process includes electronic mapping. The parent-facilitated focus groups are designed to stimulate parent-lead discussions regarding quality. The biannual provider survey which samples over 50% of all child care providers in the city and focuses on structural variables of quality such as, child/teacher ratios, salaries, and training. A few results of the Boston EQUIP data reveal that:

- The average lead teacher in a child care center receives $10.90 an hour.
- The average family child care provider receives $6.16 an hour.
- The average public school kindergarten teachers receives $39.99 an hour.
- Staff turnover in school age programs is 48%.
- 37% of the centers in Boston provide translated materials for parents.
- 79% of centers have a computer on their premises.
- 29% of the centers and 22% of the school age programs have had to close down for more than 2 days due to a facility problem.
- In one neighborhood in Boston the ratio of full time slots to a hundred children is 64 while in another it is 13.

From these data Boston EQUIP has created five benchmarks for improving the quality of the care and education system in the city. Briefly they are:

- Increasing the number of programs that are nationally accredited
- Expanding the percentage of staff who receive training
- Increasing annual staff salary
- Expanding parent engagement
- Increasing the dollars invested in child care facilities

Over the last four years this process has transformed the landscape of child care in Boston. Coupled with increased dollars for child care expansion and training, the Boston community has used the data and the benchmarks for planning, advocacy, individual program evaluations, and quality improvements. These efforts have brought millions in additional dollars to improve both the quantity and quality of the early education and care system in Boston.

Appendix D: Community Profiles Project

Categories of Survey Questions

	Categories of Questions
Center-based and Head Start	Program Information
Public School	Facilities (excluding family child care survey)
School-age	Services to Families
Family Child Care	Family Demographics
	Child Information
	Accreditation
	Program Planning
	Classroom Information
	Teaching Staff
	Director/Principal
	Benefits and Health Care
	Training
	Parental Involvement
	Technology
	Administrative Issues
	Community Partnerships for Children
	Advocacy *(excluding public school survey and family child care surveys)*
	Provider Feedback
Family	Family Demographics
	Employment
	Care and Education
	Cost of Care and Education
	Support Services/Resources
	Health

Community Profiles Project Process

The process by which the Community Profiles Project was developed stems back to October of 1998, when a Data Collection Advisory Committee was created to look more closely at the issue of data collection. Members of this Advisory Committee consist of state and federal agencies, local Child Care Resource and Referral Agencies, local CPC coordinators, higher education institutions, legislative aides and other interested individuals. At its first meeting, the Advisory Committee identified those areas in which data should be collected if a clear and concise picture of the early education and care system is desired. From this discussion, many different topics of interest were identified. The following is a list of the topics mentioned:

- Cost versus true cost
- Transportation issues and solutions
- Economic development: the relationship between early education and care and the economic development in a community
- Workforce cost benefit analysis
- "True" demand
- Supply and demand in relation to residence
- Income and how it influences access to early education and care services

- Family need for care: patchwork of care, family perception of need, transitions
- Facilities issues, usable space
- Community resources: what is accessible to children? How many community facilities are available to children with disabilities? What are the barriers? How can we help?

From this list of data collection topics, the Advisory Committee identified six priority areas: (1) workforce development; (2) quality; (3) outcomes for children; (4) market analysis; (5) family needs; and (6) socioeconomic factors related to care and education services.

The Data Collection Advisory Committee asked the Department of Education to create a process to collect data in these identified areas. The Department developed five survey instruments: Center-based and Head Start; Public School; Family Child Care; School-age; and a Family Survey. Each instrument incorporated questions based on the topic areas listed above. However, not all areas were incorporated. Appendix D highlights those areas in which data are collected for each survey.

Prior research informed the design of the Community Profiles in two ways:

- Director interviews are a reliable and valid measure of structural variables. Four surveys guided the construction of the Community Profiles tools: the National Day Care Study, Ruopp et al, 1979; Profiles in Child Care, Kisker, 1990; the National Child Care Staffing Study, Whitebrook, et al., 1992; and the Cost and Quality Study, Helburn, 1995.
- Each survey demonstrates that structural variables, measured at the program level (not for each classroom), are associated with positive social and emotional gains of young children, controlling for the influence of family income.

The Department of Education's Early Learning Services staff worked with individual Community Partnerships for Children programs to pilot the Community Profiles Project. A pre-selected group of sites were invited to attend a 3-day training on needs and strengths assessment. A few additional sites volunteered to be included. The sites brought teams of between 2 to5 people to assist in the implementation of the surveys. Teams typically consisted of representatives from one or more of the following groups: CPC coordinators, public school staff, consultants, Child Care Resource and Referral Agencies and child care providers. During these trainings, sites reviewed and revised the surveys, discussed the Community Profiles Project and developed plans for piloting one, several or all of the surveys in their community or communities.

In the revision process, participants were asked to join one of five groups developed to review each of the surveys. If they had expertise in a particular area (e.g., family child care), they were asked to review that particular survey. Group revisions were facilitated. Groups were asked to go through each survey question and answer the following questions:

> Is this question important for our local planning and advocacy purposes?
> Have we asked the question in a way that will get us the data we are seeking?
> How would we prioritize the importance of this question?

The Department of Education will enter and analyze the data collected. Technical assistance will be offered to each of the pilot communities in interpreting, understanding and utilizing the data for planning purposes. At this time, revisions will also be made to the five surveys based on the experiences and feedback of the pilot sites.

Appendix E: List of Participating Pilot CPC Programs

Name of CPC Program	Community/communities served
Ayer Public Schools	Ayer
Boston Public Schools	Boston
Chelsea Public Schools	Chelsea
Chicopee Public Schools	Chicopee
Communities United, Inc.	Arlington, Belmont, Burlington, Lexington
Communities United, Inc.	Needham
Communities United, Inc.	Newton, Wellesley
Communities United, Inc.	Waltham
Communities United, Inc.	Woburn
Community Teamwork, Inc.	Billerica, Chelmsford, Dracut, Tewksbury, Wilmington
Dennis-Yarmouth RSD	Dennis, Yarmouth
East Longmeadow Public Schools	East Longmeadow, Hampden, Wilbraham
Erving Public Schools	Erving
Everett Public Schools	Everett
Fairhaven Public Schools	Fairhaven
Frontier RSD	Conway, Deerfield, Sunderland, Whately
Gill-Montague RSD	Gill, Montague
Greater Lawrence CAC	Andover, North Andover
Greater Lawrence CAC	Lawrence
Greater Lawrence CAC	Methuen
Hampshire RSD	Chesterfield, Goshen, Southampton, Westhampton, Williamsburg
Harwich Public Schools	Harwich
Montachusett Opportunity Council	Gardner
New Bedford Public Schools	New Bedford
Orange Public Schools	Orange
Pittsfield Public Schools	Pittsfield
Plymouth Public Schools	Plymouth
Revere Public Schools	Revere
Southbridge Public Schools	Southbridge
Springfield Public Schools	Springfield
Triumph, Inc.	Bridgewater, Raynham, Taunton
Watertown Public Schools	Watertown
Worcester CAC	Webster
YMCA of Greater Worcester	Mendon, Upton

Appendix F

Early Education and Care Slots Per 100 Children in Massachusetts 1998-1999

Source: 1990 US Census
OCCS, 1998 Licesning Records
DOE, 1998

TOWN	Median Household income	# of children Under Age 6	Group Day Care Capacity Capacity Per 100 Children	Family Child Care Capacity Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Abington	$ 42,730	1,124	3	6	4	13
Acton	$ 61,394	1,440	44	7	1	52
Acushnet	$ 35,734	599	12	0	3	15
Adams	$ 25,060	683	5	32	1	38
Agawam	$ 37,261	2,025	10	20	4	34
Alford	$ 39,063	32	0	3	28	31
Amesbury	$ 37,889	1,679	18	11	4	33
Amherst	$ 26,772	1,522	29	11	1	41
Andover	$ 61,070	2,430	45	6	1	52
Arlington	$ 43,309	2,975	34	8	2	44
Ashburnham	$ 42,442	535	8	19	0	27
Ashby	$ 46,250	289	0	5	0	5
Ashfield	$ 33,372	154	15	6	15	36
Ashland	$ 51,173	1,168	36	15	6	57
Athol	$ 27,095	1,159	12	9	1	22
Attleboro	$ 36,631	4,155	16	10	4	30
Auburn	$ 39,913	1,079	20	17	4	41
Avon	$ 43,214	346	94	7	0	101
Ayer	$ 29,326	731	20	16	2	38
Barnstable	$ 33,411	3,296	23	10	5	38
Barnstable	$ 33,411	3,296	23	10	0	33
Barre	$ 36,846	454	10	14	1	25
Becket	$ 31,435	152	0	7	0	7
Bedford	$ 57,561	854	39	13	6	58
Belchertown	$ 38,868	1,029	5	18	6	29
Bellingham	$ 45,397	1,464	14	21	7	42
Belmont	$ 53,488	1,601	23	9	0	32
Berkley	$ 43,008	471	4	16	8	28
Berlin	$ 49,556	189	10	15	3	28
Bernardston	$ 32,462	155	0	43	10	53
Beverly	$ 39,603	3,202	36	9	1	46
Billerica	$ 50,210	3,419	19	15	1	35
Blackstone	$ 38,687	834	4	10	3	17
Blandford	$ 39,018	107	0	5	7	12
Bolton	$ 63,757	306	15	8	0	23
Boston	$ 29,180	41,720	25	10	1	36
Bourne	$ 34,159	1,539	13	7	0	20
Boxborough	$ 51,330	267	24	4	8	36
Boxford	$ 78,562	564	0	9	0	9

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Early Education and Care Slots Per 100 Children in Massachusetts 1998-1999

Source: 1990 US Census
OCCS, 1998 Licesning Records
DOE, 1998

TOWN	Median Household income	# of children Under Age 6	Group Day Care Capacity Per 100 Children	Family Child Care Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Boylston	$ 52,424	271	0	7	1	8
Braintree	$ 44,734	2,344	34	7	1	42
Brewster	$ 34,935	705	24	10	1	35
Bridgewater	$ 41,933	1,500	7	15	1	23
Brimfield	$ 36,227	298	8	16	0	24
Brockton	$ 31,712	9,324	10	8	1	19
Brookfield	$ 30,349	271	0	9	14	23
Brookline	$ 45,598	3,004	23	7	7	37
Buckland	$ 32,663	170	14	14	13	41
Burlington	$ 55,952	1,749	15	9	3	27
Cambridge	$ 33,140	5,499	40	7	4	51
Canton	$ 53,492	1,291	30	13	2	45
Carlisle	$ 83,985	394	27	3	0	30
Carver	$ 38,678	1,060	32	11	0	43
Charlemont	$ 28,929	112	0	13	20	33
Charlton	$ 42,461	1,044	5	13	7	25
Chatham	$ 31,315	312	21	11	3	35
Chelmsford	$ 53,971	2,569	43	15	0	58
Chelsea	$ 25,144	3,071	9	14	10	33
Cheshire	$ 36,803	276	14	24	3	41
Chester	$ 35,625	110	0	9	9	18
Chesterfield	$ 36,106	94	19	11	18	48
Chicopee	$ 28,905	4,239	11	13	12	36
Chilmark	$ 34,375	57	0	2	2	4
Clarksburg	$ 32,414	97	25	20	16	61
Clinton	$ 34,091	1,206	9	6	3	18
Cohasset	$ 62,933	556	20	4	1	25
Colrain	$ 30,093	156	0	9	15	24
Concord	$ 69,917	1,150	40	8	1	49
Conway	$ 40,990	161	0	21	17	38
Cummington	$ 30,741	60	0	2	0	2
Dalton	$ 36,518	561	12	16	0	28
Danvers	$ 43,759	1,805	27	9	1	37
Dartmouth	$ 35,138	1,691	36	10	3	49
Dedham	$ 45,687	1,747	21	12	4	37
Deerfield	$ 36,004	337	23	16	8	47
Dennis	$ 27,900	883	28	8	6	42
Dighton	$ 40,817	441	5	7	4	16
Douglas	$ 38,362	598	0	7	10	17
Dover	$ 91,376	437	25	7	0	32

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Early Education and Care Slots Per 100 Children in Massachusetts 1998-1999

Source: 1990 US Census
OCCS, 1998 Licesning Records
DOE, 1998

TOWN	Median Household income	# of children Under Age 6	Group Day Care Capacity Per 100 Children	Family Child Care Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Dracut	$ 45,165	2,206	18	22	1	41
Dudley	$ 34,139	731	0	16	10	26
Dunstable	$ 62,515	215	9	18	0	27
Duxbury	$ 63,878	1,057	46	5	3	54
East Bridgewater	$ 42,614	937	25	16	4	45
East Brookfield	$ 38,226	157	0	15	13	28
East Longmeadow	$ 41,372	1,041	31	11	2	44
Eastham	$ 31,339	310	0	8	3	11
Easthampton	$ 33,733	1,207	6	15	1	22
Easton	$ 50,647	1,620	20	9	3	32
Edgartown	$ 36,285	179	10	21	1	32
Egremont	$ 31,437	77	0	1	13	14
Erving	$ 30,469	101	0	19	32	51
Essex	$ 46,304	337	0	6	0	6
Everett	$ 30,786	2,768	3	7	10	20
Fairhaven	$ 30,097	1,129	22	6	4	32
Fall River	$ 22,452	8,258	19	2	1	22
Falmouth	$ 33,944	2,099	21	11	2	34
Fitchburg	$ 27,101	3,891	16	10	4	30
Florida	$ 29,808	82	0	1	8	9
Foxborough	$ 45,405	1,218	28	11	4	43
Framingham	$ 42,948	4,681	28	11	3	42
Franklin	$ 50,679	2,369	26	13	1	40
Freetown	$ 45,497	592	13	7	1	21
Gardner	$ 28,035	1,803	21	11	0	32
Gay Head	$ 18,250	11	0	0	9	9
Georgetown	$ 44,861	624	18	17	12	47
Gill	$ 35,057	137	56	25	12	93
Gloucester	$ 32,690	2,221	21	9	2	32
Goshen	$ 39,554	67	0	15	25	40
Gosnold	$ 38,125	1	0	0	0	0
Grafton	$ 42,310	1,067	27	19	2	48
Granby	$ 41,277	437	27	23	6	56
Granville	$ 41,591	123	0	8	7	15
Great Barrington	$ 32,345	563	27	11	0	38
Greenfield	$ 26,680	1,590	13	20	5	38
Groton	$ 55,169	791	19	13	0	32
Groveland	$ 48,351	519	7	19	5	31
Hadley	$ 36,864	270	8	20	21	49
Halifax	$ 37,197	620	9	5	9	23

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Early Education and Care Slots Per 100 Children in Massachusetts 1998-1999

Source: 1990 US Census
OCCS, 1998 Licesning Records
DOE, 1998

TOWN	Median Household Income	# of children Under Age 6	Group Day Care Capacity Per 100 Children	Family Child Care Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Hamilton	$ 49,167	600	45	3	1	49
Hampden	$ 46,638	309	0	9	13	22
Hancock	$ 32,656	45	0	11	0	11
Hanover	$ 54,759	1,008	33	6	0	39
Hanson	$ 45,515	775	19	9	13	41
Hardwick	$ 30,139	259	0	9	2	11
Harvard	$ 47,299	1,469	6	2	0	8
Harwich	$ 28,259	684	15	13	9	37
Hatfield	$ 38,864	221	0	19	19	38
Haverhill	$ 36,945	5,051	16	15	3	34
Hawley	$ 28,875	18	0	6	117	123
Heath	$ 30,179	72	0	19	29	48
Hingham	$ 60,274	1,562	20	6	2	28
Hinsdale	$ 33,714	169	0	8	0	8
Holbrook	$ 37,775	819	7	12	0	19
Holden	$ 49,143	1,217	16	16	0	32
Holland	$ 36,941	259	0	20	19	39
Holliston	$ 58,018	1,041	20	23	9	52
Holyoke	$ 22,858	4,810	14	8	4	26
Hopedale	$ 44,961	627	16	6	11	33
Hopkinton	$ 54,356	978	25	19	2	46
Hubbardston	$ 42,650	307	7	16	2	25
Hudson	$ 45,191	1,449	18	15	1	34
Hull	$ 37,683	920	6	7	5	18
Huntington	$ 33,438	199	0	17	4	21
Ipswich	$ 42,386	938	31	7	0	38
Kingston	$ 40,872	821	16	13	0	29
Lakeville	$ 44,861	685	17	13	1	31
Lancaster	$ 41,552	487	0	16	0	16
Lanesborough	$ 36,429	234	0	12	0	12
Lawrence	$ 22,183	8,171	12	22	2	36
Lee	$ 33,613	416	18	10	6	34
Leicester	$ 40,321	844	25	12	6	43
Lenox	$ 34,500	322	10	7	5	22
Leominster	$ 35,974	3,435	15	18	2	35
Leverett	$ 45,888	140	27	21	9	57
Lexington	$ 67,389	1,871	53	7	1	61
Leyden	$ 32,400	77	0	13	22	35
Lincoln	$ 57,512	1,009	16	1	6	23
Littleton	$ 51,425	610	26	25	5	56

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Early Education and Care Slots Per 100 Children in Massachusetts 1998-1999

Source: 1990 US Census
OCCS, 1998 Licesning Records
DOE, 1998

TOWN	Median Household Income	# of children Under Age 6	Group Day Care Capacity Capacity Per 100 Children	Family Child Care Capacity Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Longmeadow	$ 63,203	978	28	5	2	35
Lowell	$ 29,351	10,816	11	10	5	26
Ludlow	$ 36,247	1,349	10	9	0	19
Lunenburg	$ 43,199	729	11	17	0	28
Lynn	$ 28,553	7,881	10	8	2	20
Lynnfield	$ 58,561	725	11	5	3	19
Malden	$ 34,344	4,277	12	8	3	23
Manchester by the Sea	$ 52,806	389	30	4	0	34
Mansfield	$ 47,080	1,755	29	16	3	48
Marblehead	$ 53,333	1,423	47	3	1	51
Marion	$ 46,189	385	36	4	6	46
Marlborough	$ 41,315	2,850	28	17	3	48
Marshfield	$ 48,986	2,048	13	6	3	22
Mashpee	$ 32,524	838	10	22	3	35
Mattapoisett	$ 40,467	403	25	11	6	42
Maynard	$ 43,253	927	14	12	0	26
Medfield	$ 66,084	1,073	15	5	7	27
Medford	$ 38,859	3,752	18	8	2	28
Medway	$ 54,857	1,009	24	16	3	43
Melrose	$ 44,109	2,116	26	10	0	36
Mendon	$ 55,914	374	34	13	4	51
Merrimac	$ 41,236	496	9	20	5	34
Methuen	$ 37,701	3,189	26	17	3	46
Middleborough	$ 36,573	1,749	16	5	1	22
Middlefield	$ 36,319	27	0	37	26	63
Middleton	$ 46,096	442	20	12	0	32
Milford	$ 38,180	2,200	27	12	0	39
Millbury	$ 37,438	943	15	19	2	36
Millis	$ 50,090	760	28	22	4	54
Millville	$ 40,154	237	0	10	11	21
Milton	$ 53,130	2,057	24	9	1	34
Monroe	$ 38,125	17	0	0	50	50
Monson	$ 35,958	613	11	12	1	24
Montague	$ 27,177	740	2	16	2	20
Monterey	$ 29,659	61	0	8	15	23
Montgomery	$ 46,818	54	0	9	13	22
Mount Washington	$ 42,188	10	0	10	10	20
Nahant	$ 47,212	262	14	9	0	23
Nantucket	$ 40,331	549	28	15	4	47
Natick	$ 49,229	2,402	28	16	1	45

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Early Education and Care Slots Per 100 Children in Massachusetts 1998-1999

Source: 1990 US Census
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DOE, 1998

TOWN	Median Household income	# of children Under Age 6	Group Day Care Capacity Capacity Per 100 Children	Family Child Care Capacity Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Needham	$ 60,357	2,155	28	9	1	38
New Ashford	$ 32,143	13	0	8	0	8
New Bedford	$ 22,647	8,935	15	3	2	20
New Braintree	$ 43,214	93	0	5	4	9
New Marlborough	$ 30,577	94	0	1	10	11
New Salem	$ 35,625	62	0	23	16	39
Newbury	$ 44,068	496	6	7	9	22
Newburyport	$ 38,618	1,228	32	5	2	39
Newton	$ 59,719	5,294	43	10	1	54
Norfolk	$ 63,763	965	0	11	0	11
North Adams	$ 22,100	1,306	12	18	5	35
North Andover	$ 51,692	1,840	22	10	0	32
North Attleborough	$ 41,983	2,397	12	9	2	23
North Brookfield	$ 57,963	1,100	1	6	0	7
North Reading	$ 52,707	1,020	19	9	2	30
Northampton	$ 31,097	1,662	33	18	5	56
Northborough	$ 36,634	1,292	31	16	1	48
Northbridge	$ 31,868	495	26	32	11	69
Northfield	$ 32,580	228	28	21	7	56
Norton	$ 43,861	1,329	15	14	2	31
Norwell	$ 60,462	735	45	8	2	55
Norwood	$ 42,805	2,042	27	12	3	42
Oak Bluffs	$ 31,117	271	0	5	0	5
Oakham	$ 41,295	159	23	6	3	32
Orange	$ 26,271	713	8	13	14	35
Orleans	$ 29,519	251	24	8	4	36
Otis	$ 30,817	103	0	14	17	31
Oxford	$ 36,682	1,111	12	14	3	29
Palmer	$ 31,159	955	37	17	6	60
Paxton	$ 49,176	355	6	17	1	24
Peabody	$ 39,800	3,419	29	9	2	40
Pelham	$ 49,050	110	32	26	0	58
Pembroke	$ 46,932	1,490	16	4	0	20
Pepperell	$ 44,492	1,175	11	10	0	21
Peru	$ 34,688	89	0	11	0	11
Petersham	$ 39,063	76	31	1	0	32
Phillipston	$ 35,573	135	22	4	11	37
Pittsfield	$ 29,987	4,004	22	11	4	37
Plainfield	$ 30,673	47	0	30	47	77
Plainville	$ 41,758	620	53	12	4	69

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Source: 1990 US Census
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DOE, 1998

TOWN	Median Household Income	# of children Under Age 6	Group Day Care Capacity Capacity Per 100 Children	Family Child Care Capacity Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Plymouth	$ 39,886	4,254	12	12	3	27
Plympton	$ 46,151	205	0	17	0	17
Princeton	$ 52,708	297	6	5	2	13
Provincetown	$ 20,487	171	0	2	0	2
Quincy	$ 35,858	5,726	21	5	1	27
Randolph	$ 43,244	2,424	17	12	0	29
Raynham	$ 44,846	718	19	11	3	33
Reading	$ 52,783	1,822	12	12	2	26
Rehoboth	$ 44,967	629	2	8	3	13
Revere	$ 30,659	2,982	9	7	3	19
Richmond	$ 47,857	112	21	17	0	38
Rochester	$ 42,000	287	13	7	8	28
Rockland	$ 39,800	1,509	22	7	1	30
Rockport	$ 35,195	469	23	12	0	35
Rowe	$ 36,429	30	0	3	70	73
Rowley	$ 47,967	476	28	9	10	47
Royalston	$ 33,333	126	0	8	13	21
Russell	$ 36,927	138	0	25	7	32
Rutland	$ 44,087	483	0	19	1	20
Salem	$ 32,645	2,898	28	7	6	41
Salisbury	$ 35,679	504	9	12	10	31
Sandisfield	$ 32,417	52	0	10	35	45
Sandwich	$ 43,500	1,430	4	16	3	23
Saugus	$ 41,919	1,695	9	9	4	22
Savoy	$ 33,438	33	0	30	21	51
Scituate	$ 52,044	1,392	15	7	5	27
Seekonk	$ 43,353	965	44	6	1	51
Sharon	$ 61,692	1,546	21	15	0	36
Sheffield	$ 29,243	239	22	22	4	48
Shelburne	$ 27,639	159	18	15	14	47
Sherborn	$ 93,925	293	29	6	0	35
Shirley	$ 38,377	541	4	12	12	28
Shrewsbury	$ 44,248	1,812	22	18	5	45
Shutesbury	$ 39,868	193	0	3	9	12
Somerset	$ 36,418	1,008	17	9	5	31
Somerville	$ 32,455	4,514	13	7	1	21
South Hadley	$ 45,132	368	54	43	10	107
Southampton	$ 38,694	1,031	7	7	2	16
Southborough	$ 61,743	587	39	15	2	56
Southbridge	$ 27,834	1,589	12	9	6	27

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Source: 1990 US Census
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DOE, 1998

TOWN	Median Household income	# of children Under Age 6	Group Day Care Capacity Capacity Per 100 Children	Family Child Care Capacity Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Southwick	$ 40,656	642	20	13	1	34
Spencer	$ 33,201	1,041	8	14	2	24
Springfield	$ 25,656	15,937	18	12	6	36
Sterling	$ 49,345	625	25	16	1	42
Stockbridge	$ 35,405	111	55	5	2	62
Stoneham	$ 43,343	1,534	14	8	2	24
Stoughton	$ 42,044	2,073	34	10	2	46
Stow	$ 66,292	504	49	13	0	62
Sturbridge	$ 40,734	748	12	22	0	34
Sudbury	$ 79,092	1,286	55	5	2	62
Sunderland	$ 28,479	364	0	8	8	16
Sutton	$ 46,491	723	11	10	3	24
Swampscott	$ 50,191	979	28	8	1	37
Swansea	$ 40,117	982	22	9	3	34
Taunton	$ 32,315	4,612	13	12	3	28
Templeton	$ 34,395	510	7	17	3	27
Tewksbury	$ 52,572	2,440	23	19	0	42
Tisbury	$ 28,281	269	38	9	0	47
Tolland	$ 40,000	29	0	3	21	24
Topsfield	$ 64,995	452	46	8	0	54
Townsend	$ 46,910	900	21	17	0	38
Truro	$ 28,333	130	0	4	7	11
Tyngsborough	$ 48,842	998	13	13	2	28
Tyringham	$ 48,750	28	100	4	7	111
Upton	$ 45,962	328	5	18	5	28
Uxbridge	$ 40,059	971	4	22	11	37
Wakefield	$ 43,960	1,975	32	6	1	39
Wales	$ 34,207	148	0	13	35	48
Walpole	$ 51,242	1,770	31	12	2	45
Waltham	$ 38,514	3,374	30	7	0	37
Ware	$ 29,425	930	17	6	6	29
Wareham	$ 29,428	1,827	15	7	1	23
Warren	$ 30,423	462	0	7	11	18
Warwick	$ 31,731	65	0	22	26	48
Washington	$ 40,250	49	77	2	0	79
Watertown	$ 43,490	1,793	22	10	4	36
Wayland	$ 72,057	1,014	17	7	11	35
Webster	$ 30,067	1,542	17	12	4	33
Wellesley	$ 79,111	1,882	47	9	1	57
Wellfleet	$ 24,149	160	20	3	7	30

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Appendix F

Early Education and Care Slots Per 100 Children in Massachusetts 1998-1999

Source: 1990 US Census
OCCS, 1998 Licesning Records
DOE, 1998

TOWN	Median Household Income	# of children Under Age 6	Group Day Care Capacity Capacity Per 100 Children	Family Child Care Capacity Capacity Per 100 Children	Public Preschool Spaces Capacity Per 100 Children	Total Capacity Per 100 Children
Wendell	$ 28,869	68	0	21	13	34
Wenham	$ 53,872	252	11	2	2	15
West Boylston	$ 44,044	1,087	4	7	0	11
West Bridgewater	$ 40,613	488	97	12	3	112
West Brookfield	$ 42,830	443	5	3	12	20
West Newbury	$ 56,591	264	0	16	9	25
West Springfield	$ 33,498	3,182	11	9	3	23
West Stockbridge	$ 32,132	129	0	4	1	5
West Tisbury	$ 32,422	189	54	13	1	68
Westborough	$ 39,055	342	100	21	0	121
Westfield	$ 32,194	2,141	21	16	4	41
Westford	$ 60,566	1,648	30	13	1	44
Westhampton	$ 44,423	130	0	18	14	32
Westminster	$ 46,292	492	8	17	0	25
Weston	$ 95,134	666	82	2	0	84
Westport	$ 37,092	915	10	7	3	20
Westwood	$ 58,559	1,005	15	8	5	28
Weymouth	$ 41,586	4,112	18	8	3	29
Whately	$ 42,235	107	18	32	26	76
Whitman	$ 40,779	1,304	24	6	8	38
Wilbraham	$ 50,275	824	44	9	5	58
Williamsburg	$ 40,170	230	8	15	8	31
Williamstown	$ 33,949	364	40	4	2	46
Wilmington	$ 52,189	1,558	24	21	2	47
Winchendon	$ 32,362	1,074	0	17	4	21
Winchester	$ 65,994	1,625	15	9	3	27
Windsor	$ 44,474	80	0	24	0	24
Winthrop	$ 37,240	1,066	17	3	3	23
Woburn	$ 42,679	2,780	29	9	1	39
Worcester	$ 28,955	14,650	14	9	4	27
Worthington	$ 37,950	101	0	19	7	26
Wrentham	$ 46,331	846	26	9	3	38
Yarmouth	$ 27,222	1,383	7	9	4	20

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